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JPRS-UAG-84-044

27 November 1984

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27 November 1984

USSR REPORT
AGRICULTURE

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MAJOR CROP PROGRESS AND WEATHER REPORTING

KUSTANAY GRAIN GROWERS REPORT HARVEST PROBLEMS, PROGRESS

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 12 Sep 84 p 1

[Article by KAZAKHSTANSKAYA PRAVDA Correspondent V. Vedenko from Kustanay Oblast: "The Harvest Poses the Test"]

[Text] With the word "drought," the imagination immediately conceives of cracked ground and sparse, brown blades of grass on it. But nothing of the sort will now be found in the Kustanayskiy area. It is green as in May. It is all the more painful to the farmer that in the cornfield are stunted, weak ears.

The recent abundant rains did not help the grain as it was too late. They merely complicated and delayed harvesting. In some places there has been wheat regrowth and in others lush weeds. The green bulk has clogged the combine concaves....

Over the 30 years, the virginlands have shown everything. I know that many grain growers have notebooks where they scrupulously enter each rain, unusual temperature, signs and most importantly, the crop and the particular features of its harvesting. In terms of weather the present year is similar to the dry year of 1975. And most often the same comparison is made for results.

"At that time, the sovkhoz brought in about 1 quintal" recalled the brigade leader of the Tenizovskiy Sovkhoz, Aleksandr Sergeyevich Vaganov. "Now we thrash 3-5 and even 7 quintals on the same fields."

And he himself explains, counting on his fingers: the crop rotations on the farm have been systematized, the area under fallow has been enlarged and cultivating has been improved. But what about using harrows in the spring to comb out the weeds or rolling the soil after sowing? In some places there was not enough equipment and in others knowledge. It was felt that rolling helped to dry out the land and not on the contrary to preserve moisture. This year the cornfield has been kept using the saved supplies of water.

We went out to see Vaganov with good reason. But not because the grain grower is known in his own Borovskiy Rayon and in the oblast, has high decorations and has produced large crops. The virginlands have produced many such people and they can be met on any sovkhoz or kolkhoz. However, Vaganov differs from those in the fact that he has conceived of an exceptionally effective and simple

device for collecting the afterharvest remnants using combines. Certainly the small straw cannot be taken with an ordinary series-produced straw collector as it flies away and scatters. But it is now very useful on the farms.

In brief, the essence of the brigade leader's proposal is this: over the bottom of the collector a smooth steel sheet is fastened at a strictly fixed angle. The vegetable mass does not fall off this but at the same time can easily be unloaded mechanically. On many farms they still have to remove and put on the canvas covers by hand or constantly clean out the pan. But gradually Vaganov's innovation is spreading.

Incidentally, Aleksandr Sergeyevich would certainly not be insulted, I would assume, if it is soon forgotten that he was the developer. If only the device is beneficial then, as they say, the glory will take care of itself. In the virginlands they have gained collective experience of special, inventive farming. And Vaganov himself has gained a great deal from this.

On all the ten combines of the brigade, they have reduced the reels as the grain is short and it had to be fed to the cutting device faster. The idea came from the farm director N. Mandrik who himself learned of it from the equipment operators on the neighboring Sovkhoz imeni Dzhangil'din in 1975, when he was working there as an agronomist. As for using old springs instead of the reaper shoes (as the straw is cut lower) this was demonstrated at the rayon and oblast preharvesting seminars.

Vaganov's brigade immediately increased the pace to double the standard of 20 hectares of direct combining per unit per day. This was a major undertaking. Certainly now no one is permitted to accelerate the speed to the detriment of harvesting quality. Control is rigid and they force you to re-do things, hence, spending more time. But autumn is approaching, the rains are becoming more frequent and you must hurry, grain grower! The brigade's ten combines work the fields until midnight and here also is a "technical station," a welding unit, Kirovets trucks with trailers for grain. The young combine operators Dmitriy Kravchenko, Nikolay Khramtsov and Sergey Kurochkin not only do not lag behind the experienced Anatoliy Karel'lin or Afanasiy Dubinich, but are also striving to surpass the "elders." The collective for the third year running has been operating under a contract. Over this time the average yield along with the present one will clearly exceed the planned 12.5 quintals.

The other sovkhoz brigades have also converted to cost accounting, although for now they have noticeably lagged behind Vaganov's brigade. In the first place, they delayed in equipping the combines, and secondly, some are working far from home and there are no field camps. They spend an hour getting here and an hour getting back, like the brigade of A. Mel'nikov, for example.

These failures which are well known to the sovkhoz leaders possibly would not require mentioning here if they did not "carry over" year after year and were not characteristic of a number of other farms of the rayon and oblast. But it is a fact that the prompt readiness of the equipment and the personnel for the intense harvest period is a vulnerable point of very many. While the party and economic bodies have learned to surmount the confusion caused by the unusual harvesting conditions, it has been more difficult to escape from the hesitation

and glancing at others and waiting for guiding instructions. A week after the start of mass harvesting, daily threshing did not exceed 150,000 hectares for the oblast. For almost 18,000 combines this, of course, is a low rate. Things are going better in Naurzumskiy, Kamyshninskiy, Semiozernyy, Kustanayskiy and Borovskiy Rayons....

Each harvest season in the virginlands is a testing. A severe testing of the professional and moral qualities of its participants, regardless of the position held. And such a harvest season as the present one, where there are not record grain harvests to report, is a doubly difficult testing.

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CSO: 1824/005

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVESTING PROGRESS, PROBLEMS IN NORTH KAZAKHSTAN AIRED

Moscow PRAVDA in Russian 31 Aug 84 pp 1-2

[Article by PRAVDA Correspondents Ye. Zaytsev and A. Petrushov from Northern Kazakhstan: "The Grain of the Virgin Lands"]

[Text] Grain harvesting is continuing on the virginland expanses of Kazakhstan. The crops are to be harvested on more than 15 million hectares. The leading equipment operators are skillfully maneuvering the equipment, using each good hour. They are endeavoring to precisely set up the harvest conveyor so that the crop grown under difficult conditions is harvested at a price of the least expenditures. The work on the fields, threshing floors and elevators does not abate either during the day or at night.

"Isn't it a beautiful field?" said Viktor Genrikhovich Lyuft, not concealing his feelings. "This is what comes from fallow. The well-rested land is always responsive. Here we will harvest 30 quintals per!"

For more than 10 years, Lyuft has headed the economic service on the Zlatopol'skiy Sovkhoz. The crop noticeably increased with his arrival on the farm. In recent years, here they have harvested an average of over 20 quintals of grain. At present, the sovkhoz is counting on fulfilling its 5-year plan for the sale of grain to the state ahead of time.

The experience of the Zlatopol'skiy Sovkhoz has been employed also on other farms of Shchuchinskiy Rayon of Kokchetav Oblast. For example, for a long time the Sovkhoz imeni Shchors, was among the laggards but now has resolved to make up its debt. From the example of the Zlatopol'skiy farmers, here they have introduced all the elements of soil-protective methods. And hence the good harvests. There are many such examples. As a whole the rayon will sell to the state around 170,000 tons of grain and this will make it possible to complete the five-year quota ahead of time.

"From the very first days of the harvest a high pace has been set," related the First Secretary of the Shchuchinskiy Party Raykom N. Shevchenko. "Some 100,000 puds of grain have been delivered to the granaries."

There is no easy harvest in the virgin lands. One must always reckon the hours and minutes. And this time particularly. During the spring and summer there was not much good weather. The plants developed unevenly in places. And hence the differences in yield and maturing times.

At present it is very important to choose the correct tactics and to approach each field uniquely and without routine. This is precisely what they have done on many of the Kokchetav farms. For example, the Zerendinskiy Sovkhoz. The field has gratified the brigade leader Fedor Shamshura with hundred-pud harvests. This is the second year running. The grain has grown close and even and this is also how they are harvesting it. Here the combines operate during all daylight hours. Fedor Luk'yanov, the Mushler father and son and the other equipment operators have each assumed an obligation to thresh a thousand tons of grain.

The sovkhoz has high goals and the reaching of these by the farm will make it possible for it to constantly meet the 4-year plan for the sale of grain. The farm has been concerned for the winter accumulation of moisture, it has prepared first-rate seed and broadened the amount under fallow.

The fallow field has also proven effective for the grain growers of the Sovkhoz imeni 40-letiye Kazakhskoy SSR. Here the snow is usually late in disappearing in the spring. Hence the weeds. The fallow makes it possible to keep the plantings clean. Early in the spring we visited the field where the combine operator P. Osyak works. For a quarter of a century he has been harvesting the grain on it. During previous years his quick team of four units has succeeded in bringing the seasonal output up to 44,000 quintals of grain. And now the equipment operators are doing shock work.

On the other farms of Zeredinskiy Rayon, harvesting is being carried out in an organized manner. Since the start of the five-year plan, the Zeredinskiy farmers have never been in arrears to the state. Now they plan to deliver, as stipulated in the obligations, some 84,500 tons of grain. And all the farms are selling it, including those where the crop has been below the expected.

By the end of August in Kokchetav Oblast they had succeeded in cutting the grain on a third of the area and 90 percent of the cut had been threshed.

"For around 20 years," said the First Secretary of the Kokchetav Party Obkom, O. Kuanyshov, "we have been developing a soil-protecting farming system. It has been very beneficial. We have been able to overcome or minimize the weather problems. This year has been no exception. In a majority of the rayons the threshings have been good."

Included in these is Kzyltuskiy Rayon. Recently here they have begun to work the soil better and employ fertilizers. Seed production has been improved and the amount under fallow increased. The result was not long in coming and the ear became more bountiful. The rayon's farmers have never set such a difficult task for themselves as at present, that is, to deliver to the motherland's granaries some 300,000 tons of grain.

Thus, on many farms the harvest is not bad. Now the main thing is to harvest it promptly and not permit losses. There are some 13,000 combines operating in the oblast's grainfields. At first glance this seems a lot. But if one counts carefully, it turns out that the grain can be threshed at best in 20 days. The whole problem is the narrow cutting width of the reapers. The virginland farms must be supplied with broad-cut implements and this has been spoken about and written about for a long time. And only recently has the problem begun to be resolved somewhat.

This year the oblast received 240 10-m reapers and 5 17-m ones. This equipment is effective. On the Sovkhoz imeni Dzerzhinskiy, the combine operator F. Dubeyko in a day laid the wheat on 73 hectares in windrows. Fedor Matveyevich [Dubeyko], a combine operator with 25 years' experience, has had high praise for the new reaper but has also drawn attention to certain plant shortcomings. We feel that the Berdyansk machine builders should be more attentive to the comments from the agricultural equipment operators and organize the output of the long-awaited equipment. Its broad application will make it possible to shorten the harvesting time. This, in turn, will reduce grain losses. Tractor operators will be freed and they during harvesting are in short supply for other field work. Due to the shortage of equipment operators important procedures of soil-protective farming are often put off until "later." At the Lobanovskiy Sovkhoz one is immediately struck by the poorly worked bare fallow and the still unplowed underwinter fallow. The brigade leader, Hero of Socialist Labor, K. Ramazanov, with bitterness described how the tractor operators were forced to switch to the combines before they could till the fallow fields.

In certain areas the harvesting lasts 6-8 weeks for another reason. The equipment is inefficiently used. Also important is the skill of the grain grower. As yet a majority of the equipment operators on the virginland farms are still of the third skill class. As a rule, their output is 25 percent lower than the first-class specialists. Why are skills growing so slowly? Seemingly, thousands of professional combine operators would be trained annually in the schools and at various courses. But it turns out that it is not enough to teach them to operate the machine but is also necessary to indoctrinate them and develop their sense of efficiency.

Here also there are problems. How else to explain the facts disclosed by the people's controllers from the Druzhba and Svobodnyy Sovkhozes in Kustanay Oblast? Entire clumps of ears were left on the fields. Or take the elimination of breakdowns. The third-class equipment operators are not always capable of quickly repairing the breakdowns which arise in the field.

For example, the Kokchetav combine operator P. Osyak directly links the lack of master reapers with the imperfect wages. It is considered, Petr Stanislavovich [Osyak] argues, that the combine operator is the central figure in harvesting. But why then are his wages those of a tractor operator? Often during harvesting the earnings of a combine operator are even less.

Also valid are the criticisms of the equipment operators against Sel'khoztekhnika. Up to now there has been a shortage of spare parts and the quality of repairs on the machines has been low. On the farms of Arkalykskiy, Amantogayskiy and Derzhavinskay Rayons of Turgay Oblast, far from all the combines arrived in the fields on time. It seems that they are repeating the bitter lessons of last year when 1,500 harvesting units were not at work in the oblast for various reasons.

The elevators have begun receiving grain. We have repeatedly heard from specialists that the transporting of grain is the weakest point in the harvesting conveyor. And in actuality often one can see a vehicle standing idle by a combine waiting for a full hopper. And on the next run a combine is waiting for "its"

vehicle. Certainly the republic does have experience in precisely organizing the transporting of grain.

Let us turn to the practice of Tselinograd Oblast where they have successfully introduced the combitrailer and batch methods of hauling grain from the field. For example, in Shortandinskiy Rayon a predominant portion of the combines is served by tractors with trailers. This makes it possible to manage one's own transport.

Here the economic benefits are obvious as the threshing time is shortened and money is saved in transporting each ton of grain. However, the innovation is being introduced slowly in the republic. Less than 10 percent of the units is employing the method. Obviously, the shortage of large-capacity trailers is felt here. But this is not the only question. There is also the influence of the inertia of various farm workers and an affinity for the "rut" and dependence. It is easier to request additional transport from the city than to fully utilize one's own. And on this question there is no clear position for the republic ministry of agriculture.

The problem of the quality of harvesting has also yet to be resolved. The channels for grain losses have not been closed everywhere. One can meet mismanagement and disorganization. On the Izobil'snyy Sovkhoz in North Kazakhstan Oblast on one of the harvested fields the inspectors discovered entire "islands" of uncut wheat. On certain farms one can meet motor vehicles with leaking beds. On the threshing floors they have been late in preparing the grain. Such instances have not always been properly condemned.

A great deal depends upon the teamwork of the partners. Primarily upon the procurement workers. The weather has been unstable. Under these conditions it is particularly important to reduce the time taken for the grain to travel from the combine hopper to the granaries. Here a good deal can be done by the workers of the grain receiving enterprises. In Kustanay and Turgay Oblasts, certain elevators receive grain directly from the combines, bypassing the threshing floor. And then they dry, clean and process the grain, returning the wastes to the farms. But such close partnership has not been organized everywhere and many rayon agroindustrial associations [RAPO] have not shown tenacity.

The procurement of strong and durham wheats must be put under the rigid control of the RAPO. As is known, the virginland grain is marked by high quality. But we must see to it that the labor of the farmers is properly paid for.

...The harvesting is in full swing on the Kazakhstan virginlands. Again the soil protective farming system has proven its effectiveness. Without it the harvest could be significantly lower. The grain has been grown and now it is up to the reaping masters.

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CSO: 1824/002

MAJOR CROP PROGRESS AND WEATHER REPORTING

UDC 664.1.002.33:631.14

BELORUSSIAN SUGAR BEET PRODUCTION, PROCESSING REVIEWED

Moscow SAKHNARNAYA PROMYSHLENNOST' in Russian No 5, May 84 pp 9-12

Article by O.F. Koren', ministry of the Food Industry for the Belorussian SSR: "Operational Results Under the Conditions of the Agroindustrial Complex"/

Text/ The third and pivotal year of the 11th Five-Year Plan was an especially important one for the agricultural workers and their associated branches of the agroindustrial complex. This was the first year devoted to the practical implementation of the Food Program.

The operational experience of the agroindustrial associations testifies to the fact that their creation has made it possible to define more specifically and to raise operational efficiency in the management of the kolkhozes, sovkhozes, procurement and processing enterprises, in the interest of obtaining the best final results.

The beet growers and workers attached to the sugar plants of Belorussia are making a noticeable contribution towards carrying out the Country's Food Program.

Purposeful work is being carried out throughout the republic directed towards increasing sugar beet production and improving the organization of sugar beet procurements, storage and processing.

Industrial sugar beet cultivation is concentrated in 25 rayons in Brest, Grodno and Minsk oblasts. In 1983, sugar beets were sown on an area of 52,700 hectares. Roughly 76 tons of organic fertilizer were applied to each hectare of sowing and in conformity with the cartograms of a soil inspection and the planned yield -- the required amount of mineral fertilizer. With each passing year, an increase is being recorded in the level of mechanization and progressive forms are being introduced for organizing labor in connection with the cultivation and harvesting of sugar beets. An industrial technology for cultivating this crop is being employed in five rayons on an area of 15,900 hectares.

The agroindustrial complex has given serious attention to ensuring that the beet growing farms are supplied with high quality sugar beet seed. This seed is being grown at three specialized sovkhozes which are subordinate to the Ministry of the Food Industry for the Belorussian SSR. Against a requirement

for 10,000 quintals of such seed for industrial sugar beet cultivation, approximately 13,000 quintals were actually delivered over the past few years. The preparation of the seed for sowing (grading, chemical disinfection, treatment using the required stimulating agents) is being carried out at the Gorodeysk Seed Plant.

The raw material services of the sugar enterprises maintain close contacts with the rayon agroindustrial complexes (agricultural administrations) and also with the beet growing farms. Each year they analyze the results of the preceding year in the cultivation of sugar beets, they submit their recommendations for improving the agrotechnical work in the interest of raising the yields and the sugar content of the beets and they furnish assistance to the farms in introducing the industrial technology for cultivating this important industrial crop.

All of this made it possible to obtain a comparatively good yield last year despite the unfavorable weather conditions: against a plan calling for 1,270,000 tons, 1,275,400 tons of sugar beets were actually purchased, or 298,000 more tons than in 1982.

The kolkhozes and sovkhozes in Grodnenskiy Rayon completed 1983 with high results in the growing of sugar beets. Owing to the introduction of the progressive technology for beet cultivation and also the implementation of measures aimed at raising the culture of farming, 343 quintals of root crops were obtained here from each of 3,585 hectares. Their average sugar content was 16.7 percent.

At the Progress Kolkhoz in Grodnenskiy Rayon, 427 quintals of beets with a sugar content of 16.5 percent were obtained from each of 425 hectares. In the process, the labor expenditures per quintal of output amounted to 1.26 manhours and the production cost -- 3 rubles and 90 kopecks. A net income of 753 rubles was obtained from each hectare of sowing. More than 400 quintals of roots per hectare were obtained in 1983 at the kolkhozes imeni Suvorov and imeni Lenin in Shchuchinskiy Rayon, Rossiya and imeni Kuybyshev in Ivatsevichskiy Rayon, the Prinemanskiy Sovkhoz in Grodnenskiy Rayon and others.

A great amount of attention is being given throughout the agroindustrial complex to improving the quality of the agricultural raw materials and to reducing losses in these materials during the harvesting, storage and processing operations.

Increases are being achieved in the sugar content of the beets on the farms by observing the crop rotation plans, preparing the soil in a high quality manner, applying optimum doses of mineral fertilizer, maintaining the planting density (80,000-90,000 beet plants per hectare) and so forth.

This is making it possible from year to year to raise the quality of the raw materials being procured. Thus the average sugar content of the beets in 1981 was 16.43 percent, in 1982 -- 16.46 and in 1983 -- 16.78 percent, against a base percentage of 16 percent. Last year the republic's kolkhozes and sovkhozes earned approximately 4 million additional rubles for having turned over beets having a higher sugar content than the base figure.

Especially fruitful work is being carried out in the zone of the Slutsk Sugar Refining Combine in connection with improving the quality of the sugar beets. In 1983, against a plan calling for 301,500 tons of sugar beets, this combine actually procured 307,900 tons having an average sugar content in the roots of 17.4 percent.

In early September, in the interest of reducing sugar beet and sugar losses, the specialists at sugar plants and beet receiving points carried out an extensive pre-harvesting inspection of the sugar beet plantings. The schedules given to the farms for harvesting and shipping the sugar beets were based upon the results of this inspection. In addition, these materials were used when distributing the beets in clamps depending upon the storage schedules.

For the purpose of achieving more efficient management of the procurement-transport operations and in the interest of reducing the schedules for shipping the beets from the kolkhoz and sovkhoz fields to the beet receiving points, dispatcher services were created the structure of which includes agricultural specialists and also specialists from transport organizations and sugar plants.

The beet receiving points are well equipped with beet packing machines of modern designs -- Kompleks 65-M2BK and Kompleks 65-MZK -- tractor-loaders, stationary motor vehicle scales with a capacity of from 30 to 60 tons and mechanized and automated lines for determining the overall degree of contamination and sugar content of the beets. Of 73.4 hectares of clamp fields, 31.3 hectares have a hard surface and this amounts to 42 percent of the overall area.

At the present time, the beet receiving points of sugar enterprises are capable of accepting 70,000 tons of beets daily and this makes it possible to ensure sugar beet procurements while observing the sugar beet shipping schedules over a period of 20-25 working days.

The sugar beet storing technology is being improved throughout the republic. In 1983, 229,800 tons (more than 30 percent of the beets for medium and extended storage periods) were placed in storage in clamps having forced ventilation and 90,000 tons were processed using biologically active substances which retard germination. The experience accumulated in covering the clamps with formaldehyde congealed foam plastic, which has proved its worth, is being employed more extensively. Foam plastic was employed in 1981 for covering 86,000 tons, in 1982 -- 122 and in 1983 -- 241,000 tons. The foam plastic is applied to the sides and ends of the clamps in a layer ranging from 8 to 12 centimeters thick.

This made it possible during the second half of 1983 to reduce beet losses during storage by 4,100 tons compared to the planned figure, or by 0.46 percent of its bulk.

Measures are constantly being carried out at the sugar plants aimed at achieving technical and organizational improvements in the processing of sugar beets and introducing a progressive technology and leading achievements into the sugar industry.

In raising the efficiency of sugar production, great importance is being attached to improving the organization and stimulation of labor.

In 1983 the brigade form of labor organization encompassed 86.9 percent of the workers, with 91.5 percent of the workers in the brigades being paid based upon the coefficient of labor participation.

From year to year the republic's sugar plants operate under a tense regime concerned with the production of sugar from beets and unrefined sugar. In 1983 the processing of beets lasted for 114 days. Only 105 calendar days remained for repairing and preparing the plants prior to the beet procurement and processing season in behalf of the 1983 crop. During this brief repair period, 150 organizational-technical measures were carried out at the plants and more than 60 units of technological equipment were installed or replaced.

Despite the brief repair period, the republic's sugar plants were well prepared for the beet processing season for the 1983 crop. This was borne out by the production-technical indicators for the work carried out by the plants. During the second half of the year, the beet processing work was fulfilled by 104.8 percent. The capabilities of the enterprises were utilized by 94.7 percent. The sugar losses during production were lowered by 0.01 percent. The sugar yield amounted to 12.84 percent. All of this made it possible to obtain 7,656 tons of sugar over and above the plan. Moreover, a savings of 1,230 tons of conventional fuel was realized.

Even greater tasks must be carried out by the republic's beet growers this year. The plan calls for beet production to be raised to a higher level. In addition to carrying out the annual procurement plan, the beet growers are also being called upon to make up for the 1982 shortfall in beets.

The increase in the production of sugar beets will be achieved by means of intensive factors, that is, by increasing yields while decreasing expenditures. Special attention will be concentrated on raising the fertility of the land. For each hectare sown in this crop, the plans call for not less than 70 tons of organic fertilizer to be applied and also complete dosages of mineral fertilizer in conformity with the planned yields. Fifty six percent of the areas sown in this crop have already been fertilized with organic and phosphorus-potassium substances, which were applied during the autumn of last year at the time of the autumn plowing.

Taking advantage of the additional time that is available during the winter period, training was provided for the beet growers on farms throughout the raw material zone and measures were outlined for improving the organization of labor and for introducing leading achievements of science and practical experience into operations.

Success in solving the problems associated with further improving beet production is greatly dependent upon the relationships established between the sugar enterprises and the beet growing farms. The experience of recent years has shown that as a rule increases take place in the sugar beet yields and the sugar production plans are successfully fulfilled in those areas where these relationships are well organized and where joint work is carried out by the beet growers and sugar industry specialists directed towards achieving high

final results. This is convincingly borne out by the operational results of the Slutsk Sugar Refining Combine.

In 1983, 5,600 tons of sugar were obtained here over and above the plan and the above-plan profit amounted to 2,775,000 rubles. The sugar yield obtained from the beets during the second half of the year amounted to 13.53 percent, or 1.08 percent higher than the plan, and the average daily productivity in processing the beets -- 102.7 percent.

The sugar industry workers are devoting special attention to improving their business-like relationships with kolkhozes and sovkhozes in the raw material zones. A requirement exists for ensuring that productive work becomes the norm in each collective and in each sector concerned with the growing and processing of sugar beets. This will make it possible to ensure the efficient use of the production and scientific-technical potential and to raise sugar beet production to a higher level.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

INDUSTRIAL TECHNOLOGY FOR CORN CULTIVATION IN KAZAKH SSR

Moscow SEL'SKAYA ZHIZN' in Russian 12 Sep 84 p 1

Article by A. Utyaganov: "Generous Corn"

Excerpts Over the past few years, a chief reserve for improving the grain economy in Chimkent Oblast has been that of expanding the areas set aside for corn. Compared to 10 years ago when corn grain was sown on 10,500 hectares, today this crop occupies more than 47,000 hectares, with a large portion consisting of newly irrigated lands mastered using the method of national construction project.

A reliable base was created over a brief interval of time for cultivating grain corn using an industrial technology. This includes not only well prepared fields but also hundreds of kilometers of irrigation and collector-drainage network, mechanized threshing floors and a drying economy. Training was provided for thousands of agricultural machine operators, all of whom are now well familiar with the agricultural practices.

"Shock work was carried out in connection with the introduction of new lands into operation, levelling them off and creating irrigation canals and this work became the norm for our life" stated the 1st secretary of the Kzylkumskiy Rayon Party Committee U.A. Arginbekov, "We received assistance in this regard from the entire oblast and especially from the machine operators of the Turkestansovkhozvodstroy Trust."

One particular picture is typical of the rayon -- bulldozers, sowing units and cultivators are in operation alongside a field where undergrowth is being uprooted.

Despite the complicated weather conditions, the rayon's farmers firmly intend to carry out the procurement plan for this valuable crop.

The harvest work is in full swing in the southern part of the oblast. The Pakhtaral Sovkhoz and also the farms in Dzhetyayskiy Rayon are obtaining 75-70 quintals of grain from each hectare.

This year has turned out to be a difficult one for the oblast's farmers -- hot winds have scorched the grain crop plantings over large areas. But the grain sales plan will necessarily be fulfilled by means of corn grown in spite of the caprices of the weather. At the present time, successful work is largely dependent upon the procurement specialists. Unfortunately, they are

still under a great obligation to the farmers. As yet, the Timurskoye Grain Receiving Plant is still not ready to accept the grain and over a period of many years they have been unable to build a grading plant here.

"The construction work was started about 20 years ago" stated the deputy chief of the Grain Products Administration A.M. Pavlonich, "But an inspection revealed that it would be impossible to supply it with modern equipment, since it lacked a good drying economy. At the present time, the corn not only from Kzylkumskiy Rayon but also from the nearby Turkestanskiy, Suzakskiy and Bugunskiy rayons must be shipped for processing and grading to Tyulkubasskiy Rayon -- a distance of 250-300 kilometers. This will be very costly for the farm, for the transport workers and for the branch's economy on the whole.

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CSO: 1824/053

MAJOR CROP PROGRESS AND WEATHER REPORTING

MEASURES FOR IMPROVING CORN YIELDS IN KAZAKHSTAN

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 2, Feb 83 p 16

Article by D. Sydykov, agronomist and O. Tureshev, candidate of agricultural sciences: "Agricultural Practices for Corn Hybrids"

Text One of the principal conditions for raising corn yields is that of using the best regionalized and promising hybrids. In recent years the plant breeders at the KazNII Kazakh Scientific Research Institute of Farming have developed the highly productive corn hybrids Yuzhnyy e TV and Kazakhstanskiy 43 TV, regionalized in the southeast region of Kazakhstan, for the cultivation of grain to full ripeness and for silage to milky-waxy ripeness.

However, a study has still not been undertaken of the particular high quality agricultural practice used for them in the specific natural-climatic zones. One important agrotechnical method and one which ensures the development of high corn yields is that of an irrigation regime and a level of support in the form of nutritional elements for this crop. In this regard, a need has arisen for a more detailed study of the effect of these factors under various conditions of mineral nutrition.

It is known that the cultivation of corn for grain and silage is possible only under conditions involving artificial irrigation.

The agricultural practice for the cultivation of hybrids corresponded to the recommended technology. In the autumn, after the sugar beets had been harvested, fall plowing was carried out to a depth of 25-27 centimeters. Simultaneously with the autumn plowing, the entire norm of phosphorus, potassium and two thirds of the nitrogen fertilizers were applied at the rate of 5-6 quintals of superphosphate, 2.2 quintals of potassium salts and 2.3 quintals of ammonium nitrate per hectare. The remaining dosage of nitrogen fertilizers was applied during top dressings: the first -- during the phase of 4-5 leaves, the second -- during the period of formation of 8-10 leaves.

For the purpose of destroying weeds and creating a loose soil condition, two cultivations were carried out with simultaneous harrowing and smoothing out. The second was carried out directly prior to sowing to the seed placement depth (8-10 centimeters).

The sowing was carried out during the best periods (end of April, beginning of May) using the single grain sowing method, with an inter-row spacing width of 60 centimeters, at a time when the soil had warmed to 10-12 degrees at the seed

placement depth. The density of the plants -- 60,000 per hectare. Two loosenings in a longitudinal direction were carried out during the growing season using a cultivator-plant feeder. The first -- to a depth of 8-10 and the second -- to a depth of 6-7 centimeters.

During the period in which the studies were carried out, it was established that the irrigation regime and the mineral fertilizer dosages exerted a definite effect on the rates for linear growth, on the leaf surface area and on the accumulation of dry biomass. This was reflected in the fodder yields obtained from the corn hybrids. Thus the fodder yield for the Yuzhnyy 3 TV hybrid, when the recommended dosage of mineral nutrition was employed, amounted to 647 and when this dosage was raised -- 683 quintals per hectare. For a raised soil moisture content, it increased respectively by 47 and 25 quintals per hectare.

The late ripening Kazakhstanskiy 43 TV is characterized by a very high silage bulk productivity. Its yield against the recommended mineral nutrition background amounted to a 3 year average of 751 quintals per hectare and surpassed the productivity of the VIR 156 hybrid by 95 and Yuzhnyy 3 TV -- by 104 quintals per hectare.

The criterion for establishing the effectiveness of an irrigation regime and mineral fertilizer dosages is an economic evaluation of them. A check carried out on the recommended irrigation regime and on the mineral fertilizer dosages at the Prigorodnyy Sovkhoz in Kaskelenskiy Rayon in Alma-Ata Oblast confirmed the results of the experiments. The Kazakhstanskiy 43 TV hybrid is distinguished by an especially high productivity -- its average fodder yield over a period of 2 years of 734 quintals per hectare surpassed the yield of the earlier regionalized VIR 156 hybrid by 143 quintals. Hence, for the purpose of increasing the production of corn fodder in the southeastern oblasts of Kazakhstan, the late ripening Kazakhstanskiy 43 TV hybrid can be cultivated successfully.

Thus, when growing the Kazakhstanskiy 43 TV hybrid for silage, its normal growth, development and productivity on piedmont light chestnut brown soil can be ensured by five waterings carried out during damp years and six during dry and medium dry years. And for the Yuzhnyy 3 TV hybrid it is sufficient to carry out three or four waterings according to the growing season periods. Fertilizers should be applied at the rate of 6 quintals of simple superphosphate, 2.2 of potassium salt and 5.3 quintals of ammonium nitrate.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PROGRESS, PROBLEMS REPORTED IN HANDLING OF GRAIN SHIPMENTS

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Sep 84 p 1

[Article by A. Klyuyev, KAZAKHSTANSKAYA PRAVDA special correspondent in Uralsk Oblast: "Grain in the Urals Region"]

[Text] Harvesting in the corn fields of the Urals area is coming to an end. Day and night, vehicles hauling grain from the threshing houses to the elevators are speeding along country roads.

A "KamAZ" tractor [Kamskiy motor vehicle plant] with tandem trailers brakes smoothly to a stop outside the two-story building which houses the state testing laboratory. After its load of golden grain is weighed and a sample specimen is taken, the tractor-trailer rolls up to the elevator dock. Skilled dock hands quickly empty the contents of the trailers and freight boxes one after another through a grate into conveyer buckets. At this point, I approach the driver, and inquire about the amount of time spent in delivering the grain.

"Twenty minutes," answers Anatoliy Mikhailovich Kruglov, glancing at his watch. "It's under the allotted time".

"And do you ever encounter delays?"

"No. Never. And I have been delivering grain to the Peremetninskiy elevator since the beginning of the harvest."

Anatoliy Mikhailovich is one of the best drivers of the Zelenovskiy ATP [motor transport enterprise] number 29008. He has fulfilled his personal requirements under the current five-year plan well ahead of schedule. He also is achieving outstanding results in transporting this year's harvest. His daily output is an amazing 100 tons. Over the course of this harvest, Kruglov has already delivered more than 2000 tons of grain to state granaries.

Many other drivers are also exceeding their quotas for transporting grain from farms of Zelenovskiy Rayon to the elevators; to name a few: Yu. Lebedenko, P. Konduktorov, M. Kantemirov, N. Kositsyn and A. Sementsov. By closely adhering to the timetable and making wide use of trailers, they have considerably reduced the number of vehicles involved in delivering harvested grain. Instead of the

120 vehicles called for under the plan, they are successfully handling the harvest transportation effort with a total of only 80 vehicles.

Workers at Peremetninskiy grain depot number 102--the largest in Uralsk Oblast--have made preparations for receiving grain shipments from the new harvest on a careful and timely basis. Right now is the most hectic and demanding time of the season. The elevator is working day and night, handling around 2000 tons of grain each day. Newly arriving tractor-trailers and other transport vehicles are serviced and unloaded without delay. The incoming grain is quickly cleaned, dried and dispatched to the proper place within the building for storage. Hundreds of thermometers closely monitor grain temperatures within the towers.

"Our enterprise is the newest in the oblast; it went into operation two years ago," says its director, Serik Otargazihevich Otargaziyev. "All production processes within the operation are fully mechanized and automated. In addition, functional control is maintained from a single dispatching center, which employs no more than eight persons per shift. Automatic sampling devices have been installed in the state testing laboratory, replacing four lab technicians and greatly speeding up the qualitative analyses of grains. All of this helps us to do our work smoothly and without interruptions. Already, about 70,000 tons of grain--almost half the elevator capacity--has been taken in."

Reliable, trouble-free operation of the enterprise's sophisticated equipment is assured by the efforts of senior foremen A. Andrashchuk and V. Vayzert of the production department, maintenance mechanic V. Kulikov, electrician S. Begaliyev, dust-control technician K. Karagoyshev, and a number of other workers. Senior laboratory technician B. Dzhubanysheva, aided by assistant technicians Ye. Sinegelnikova and I. Kdimova, perform the work of taking grain samples with quickness and precision. The shift which is supervised by brigade leader U. Tokzhanovaya does an outstanding job in the performance of their watch duties in the control center. For two decades running, they have retained first place in the socialist competition.

In addition to receiving and processing incoming shipments, elevator workers also handle outgoing shipments as well. Every day, about 50 grain carriers are dispatched from here to milling enterprises.

Also feeling the stress of this hectic period are the personnel of another large grain-holding enterprise--the Zhelayevskiy elevator, which has already taken in 80,000 tons of grain. It is being brought here 24 hours a day from farms in Priural'nyy, Akzhaikskiy, Dzhambeytinskiy and other rayons.

Like their Peremetninskiy counterparts, the Zhelayevskiy granery workers put their materials and equipment base in readiness well in advance of the new harvest. As a result, there are now no vehicular traffic jams here, and there is no need to bring in additional workers from the outside. The state testing lab, the sixty-ton scales and the four automatic unloading units are functioning quite effectively.

Brigades under the direction of V. Kozlov and I. Dambusinov are carrying out the processing of grain at the enterprise with all possible dispatch. Mechanic A.

Demin, electrician M. Ubishev and welder A. Sadykov are conscientiously maintaining the equipment in good working order. Others faithfully discharging their responsibilities are scale operator A. Myasnikova and the state testing lab technicians working under T. Grunskaya. And the load they are carrying is by no means a small one: approximately 2500 tons of wheat and barley come into the elevator in any given 24-hour period.

Grain shipments from the new harvest are also being handled well at the Kazakhstanskiy and Shipovskiy elevators, as well as at the Ural'skiy, Rostoshinskiy and Chingirlauskiy grain depots. At present, there are a total of 19 elevators, depots and grain-holding facilities operating within the oblast. Every 24 hours, 18-20,000 tons of wheat, barley and millet are fed into them. Since the beginning of the harvest, state granaries have received grain shipments in excess of 700,000 tons; the wheat is being received in huge shipments of hard and high-grade varieties. Many enterprises are receiving grain right out from under the combines.

"Granery workers in the Urals area are doing their jobs with remarkable selflessness," pointed out Nasi Sarsenovich Sarsenov, the deputy chief of the oblast administration of grain products. "It isn't all up to us, however. Some rayons are still suffering from a shortage of motor transport. Other factors are involved as well. For example, the people in our branch have quite a few claims against planners who permit sizeable miscalculations in their work. Elevators--even the large-capacity designs--are being designed and built with inadequate facilities for receiving grain shipments. As a result, there is nothing one can do but set aside extra space within them for storing grain, and improve the existing equipment oneself."

Despite the specific inadequacies, facilities for grain storage in the Urals area are, on the whole, quite reliable. Mindful of their tremendous responsibility, the granery workers are currently making an all-out effort as they labor in concert with grain growers and transport workers. For they all have in common the primary objective of completely securing and preserving the fruits of the harvest.

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CSO: 1824/675

MAJOR CROP PROGRESS AND WEATHER REPORTING

DELAYS IN OFF-LOADING GRAIN SHIPMENTS SCORED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 31 Jul 84 p 1

[Article by V. Pen'kov, writer for AVTOMOBIL'NYY TRANSPORT KAZAKHSTANA magazine in Uralsk Oblast: "A Sharp Signal[editorial emphasis]--They Are Not Ready to Receive Grain"]

[Text] The telephoned message to the Uralsk freight-control office was highly disturbing: at the deep-storage Dzhambeytinskiy grain-holding facility, heavily loaded "KamAZ" tractors [Kamskiy Motor Vehicle Plant] with two or more trailers had been standing at the docks for some time waiting to be unloaded. It was a situation which called for an immediate investigation. We drove out to the region in the company of the head of the freight transport department, Aleksandr Ivanovich Tyurin.

We met the director of the grain-holding facility, Khabidulla Akbasov, near one of the huge grain piles.

"What can I do?" he sighed. "We are simply not geared up to handle these heavy-weight tractor-trailers. Our elevator was designed for low-tonnage vehicles."

Two drivers in truck convoy 25-55, Vladimir Ivanovich Shmykov and Anatoliy Ivanovich Ramadin, told their story:

"We loaded up our tractor-trailers at the sovkhoz early in the morning, and by half past ten, we were already here. And what do we find? Our rigs have been standing fully loaded with grain since we arrived. And now it's already six o'clock in the evening."

Another trucker, S. Shilonshin, had been waiting even longer for his grain cargo to be unloaded. He arrived yesterday at nine in the evening, then took his place in line as night fell. He slept in the cab of his truck. In the morning, he went to a local diner for breakfast, but found that they had nothing but candy and tea. It was noontime before his cargo was unloaded.

Very much the same kind of story was told by I. Chesnokov, who had hauled a load of grain from the sovkhoz "Buldurtinskiy" in his KamAZ dual-tandem rig. At the other end of his haul, he was surprised to find that six tractor-trailers had been waiting in line ahead of him since morning.

The leader of truck convoy 25-92, Yuriy Agafonovich Mironov, tells us:

"The unloading process alone takes more than 3 hours, because the grain bins are small, and, as a matter of fact, the grain-holding facility is totally unprepared for the work it is supposed to be doing. Of course you don't unload different kinds and grades of grain into the same pile or storage bin. But that isn't the consideration causing the delays. There are newly cleared areas at the grain-holding facility for unloading grain shipments. They simply have not been made ready for this.

When they arrived at the grain-holding facility, A. Galimov, chief of the raykom agriculture department, and U. Sarguziyev, rayispolkom deputy chairman, were completely unaware of the situation which had developed. They also had not been informed that the grain-storage areas were, as of that time, still not outfitted with an elevator capable of unloading KamAZ tractor-trailers. It was only after much debating that the director agreed to start up the conveyer belt for moving grain to the piles, and to make arrangements for nighttime security in the area.

...It was already nine o'clock in the evening, and, one after another, new tractor-trailers loaded with grain continued to arrive on the grounds of the grain-holding facility--but the elevator was still not operating.

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CSO: 1824/675

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST PROGRESS IN ALTAY KRAY

Moscow PRAVDA in Russian 13 Aug 84 p 1

[Article by V. Sapov, Altay Kray: "Siberian Acceleration/Harvest-84:Called Intensive Work"]

[Text] The arable land in the Altay extends over more than 4 million hectares--from Kulunda to Salair. It promises a large harvest. The kray's kolkhozes and sovkhozes have pledged to sell the state 3.7 million tons of grain. Harvesting operations are taking place under difficult weather conditions. Rains and large numbers of lodged crops are a hindrance.

The eastern group of Altay rayons are frequently called the "Siberian Kuban"--here the climate is milder and the soil is richer than in the steppe zone. Abundant rain has transformed the soil. Fertile grain fields alternate with abundant green corn plantations. It looks like a carpet with an artistic weave rather than like crops. But winds and rains have flattened the fluffy "pile" of the spike crops.

"This is not the first time we must harvest such grains," says F. Voropayev, combine operator of Slava Trudu Sovkhoz. "As long as we have something to thresh we will do a thorough job."

Altay workers are truly satisfied with the fruits of their labor. In the Slava Trudu Sovkhoz there are 5,000 hectares in grains, including one-third in winter rye and wheat. Last year an average of 35 quintals of winter crops were harvested. Some plots yielded even more. Here workers are full of decisiveness to reach these goals.

The Altay's winter fields have grown to 320,000 hectares. It was organically written into the structure of the grain fields. In rayons such as Altayskiy, Sovetskiy, Biyskiy and Tselinnyy, Vyatka and Chulpan rye have been registered for a long time, yielding 25-30 quintals of grain per hectare and a noticeable savings in time. As a rule, the harvesting of winter crops begins much earlier than that of spring crops. This enables farmers to "untie" the already complex "knot" of field work.

Of course, in farming no year is like another. The same is true now. Everywhere in the Altay it has been necessary to combine the "green" harvest with that of grains, thereby increasing the burden placed on machines. But even this difficulty is being eliminated here. A method of large-group use of equipment is utilized. The tone is being set by contractual links, which have already worked over one-third of fields. The workers of Smolenskiy Rayon have singled themselves out especially by creating 48 independent subdivisions. Over 60,000 hectares of grain crops have been assigned to them.

"Independence campaigns for itself," says the first secretary of the Smolenskiy Rayon party committee, I. Zanin. "Last year in such links yield turned out to be half a quintal higher."

As initiators of socialist competition for the successful fulfillment of the five-year plan in grain production, the workers of Smolensk Oblast are firmly confirming their supremacy. They pledged to harvest an average of 30 quintals of spike crops, to sell the state no fewer than 100,000 tons of grain and thereby to cover debts that have arisen since the beginning of the five-year plan.

At the present time over 1,500 complexes unifying a 100,000-strong detachment of machine operators and drivers, 25,000 combines and 14,000 reapers are at work on Altay fields. All combines down to the last one have been put into operation. Even those that were subject to being written off were put to use. When necessary, reapers were equipped with stalk raisers. The harvesting of peas is somewhat more difficult--there is a shortage of blades for reapers. There is a shortage of sections for regular reapers. The repair of GAZ-53 vehicles is also being delayed due to the shortage of spare parts.

Organizational problems are also having their effect. For example, preparations for the harvest were poor in the enterprises of Kytmanovskiy Rayon. The condition of threshing floors and storehouses is especially lamentable. The collection of chaff is not carried out everywhere and a number of kolkhozes and sovkhozes are delaying the harvesting of straw, which hinders the completion of a complex of field operations.

The "combine-threshing floor" section is being organized with the help of bunker-accumulators, but the "threshing floor-elevator" line breaks down sometimes in some places, resulting in interruptions in the field conveyor. A poor weighing enterprise in some kolkhozes and sovkhozes and a shortage of drying capacities and covered threshing floors have their effect.

"Things are rather hot here now," complains the director of the kray administration of grain products, S. Strelyayev. "After all, we accept any type of grain. Two hundred eighteen dryers are working at full capacity. Some of these have been given to remote enterprises. There are 4-5 scales at every reception point. They will accomodate loads of up to 60 tons, which includes tractor-trailer rigs and Kirovets tractors with trailers."

The kolkhozes and sovkhozes of Altayskiy, Smolenskiy and Uglovskiy rayons have begun harvesting operations and the delivery of grain to the state well. The harvest front is moving gradually from eastern regions of the kray to the west, to Kulunda, which is renowned for its strong wheat varieties. A great deal is being done to accelerate the harvest in the Siberian manner and to complete harvesting rapidly and without losses.

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CSO: 1824/025

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST PROGRESS IN KURGAN OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 16 Sep 84 p 1

[Article by D. Prosekov and I. Shevchenko, special correspondents for SEL'SKAYA ZHIZN', Kurgan Oblast: "Grain from the Transurals"]

[Excerpts] Having utilized progressive harvesting methods, farmers of Kurgan Oblast are completing the harvesting of grains and are preparing fields for next year's harvest.

Precise organization of the harvesting conveyor enabled Krasnoye Znamya Kolkhoz, the initiator of oblast competition during harvest operations, to be among the first to complete grain harvesting and to fully harvest that which was cultivated at a yield per hectare of over 20 quintals of grain. For this year's dry conditions this is not bad. After all, T. S. Mal'tsev, an elder among grain farmers of the Transurals, a field worker of Zavety Lenina Kolkhoz, Shadrinskiy Rayon, and twice Hero of Socialist Labor, always maintains that it is easier to produce 2-3 tons of grain per hectare under favorable weather conditions than 1 ton under dry conditions. The kolkhoz fulfilled its socialist obligations on the sale of grain to the state ahead of time and poured quality seed into granaries.

In the Krasnoye Znamye Kolkhoz such approaches are being sought, and the tone is being set by specialists. On two-thirds of sowing area cross seeding is being employed. Fields were packed and thus moisture was retained. Long-term practice has convinced us that the best predecessor for grain crops is sweet clover--it helps to accumulate moisture and enriches the soil with nutrients. This year confirmed this once again. In all oblast enterprises where there was a strict adherence to the farming system and to agrotechnology with a consideration of local conditions, jumps in weather--a rainy fall and dry summer--did not turn out to be that deleterious for the harvest. For example, in the north and west the farming system proposed by T. S. Mal'tsev was very effective. In the southern part of the oblast, following the example and experience of Berezovskiy Sovkhoz, the soil conservation system has proven itself well. Here we find fallow only with windbreak strips, with strips of winter rye as a rule.

Today everyone is concerned about completing the harvest without losses. Two-stage harvesting is being coordinated with direct combining--of 12,000 grain

harvesting combines 8,000 were able to carry out direct threshing. This direction is being dictated today not only because the grain is short and sparse, but also because this is more economical. The expansion of the drying and sorting industry in kolkhozes and sovkhozes enables us to process everything that has been threshed that day through the machines on threshing floors.

Harvesting operations are coming to an end in Shadrinskiy, Vargashinskiy, Safakulevskiy, Belozerskiy, Kargapol'skiy and Yurgamyshskiy rayons. Here special attention is being paid to the productive use of technology and to preserving everything that has been raised in the fields. In Zavety Lenina Kolkhoz of Shadrinskiy Rayon there are four covered mechanized shops and covered asphalt-paved platforms, and threshed grain (output is 24 quintals per hectare) is immediately placed under dependable roofs.

Farmers are hurrying--after all, it is fall outside and by mid-September grains remained unthreshed on 10 percent of the oblast's area. Grain is being actively sold to the state in Shadrinskiy, Shatrovskiy and Shchuchanskiy rayons; all new enterprises report on the fulfillment of the first precept. Still, in some places attempts are made to blame errors on bad weather. This refers first and foremost to Al'menevskiy, Polovinskiy and Shumikhinskiy rayons. During recent weeks they have not delivered even a third of the planned volume of grain. The shortage of transport vehicles is hindering the conveyor. For example, Chastoozerskiy Rayon was lent 150 trucks from Sverdlov Oblast for the duration of the harvest, 130 arrived and only 66 are operating. The rest cannot be repaired. It is necessary to use wheeled tractors, including powerful ones such as the Kirovets. In Polovinskiy Rayon 30 K-700 tractors are now involved in work that should be done by trucks. The same picture exists in Dalmatovskiy Rayon. These tractors are needed to ready the soil for the future harvest. We feel that it would make sense for republic organs to study the problems and to take measures.

The Transurals are a great supplier of grain. Here grain fields occupy almost 2 million hectares. Usually Kurgan farmers send more grain per hectare to state granaries than other oblasts in the region. But the weightier the contribution to the general task, the more difficult it is to obtain this grain, the greater the satisfaction of grain farmers and the more active their desire to act with a consideration of local conditions. The achievements of grain farmers from other regions of the country are widely used. On Kurgan fields Saratov and Novosibirsk wheat varieties, Ukrainian barley and Bashkir winter rye "work" successfully. Following the experience of Yemurtlinskiy Sovkhoz in Tyumen Oblast soil is plowed with so-called combs.

Specialists assure us that no subsequent harrowing is better for the harvest than plowing with a plow that has combs made from the track pins of tractors attached to its frame. There is every reason for workers of the USSR Ministry of Agricultural Machinery and the USSR Ministry of Agriculture to examine this valuable experience. Everyone whom we talked to was of the same opinion.

This year's harvest in the Transurals has become a routine test of the skill of grain farmers. It has taught them a great deal. After all, there are no two harvests alike. The results of work still must be interpreted and analyzed. Meanwhile, fall does not provide a break and it is necessary to be concerned about the future harvest, and in particular to store seed. The enterprises of Kargapol'skiy Rayon, for example, have already stocked their full supply. The pace of fall plowing is increasing.

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CSO: 1824/026

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST PROGRESS IN OMSK OBLAST

Efforts Being Made to Reach Goals

Moscow SEL'SKAYA ZHIZN' in Russian 9 Sep 84 p 1

[Article by M. Sil'vanovich, Omsk Oblast: "Lessons of the Omsk Farmlands"]

[Text] The sovkhozes and kolkhozes of Omsk Oblast are threshing grains on the second half of their sowing area. Machine operators are making an effort to sell the state 1.6 million tons of grain this year.

It has been known for a long time that if the Siberian harvest is a fairly good one, in addition to satisfaction through fall the grain farmer will continue to be concerned that the grain may be subject to autumnal bad weather. This year in many regions the grain harvest is truly a good one. But operations reports sometimes reveal numbers that differ greatly from each other--22, 8.20 and 10. In places where productivity is higher the threshing pace is lower. Only Tavricheskiy Rayon managed to violate this "law." With a productivity exceeding 18 quintals it is already completing harvesting. The farmers of Russko-Polyanskiy, Pavlogradskiy and Odesskiy rayons are also holding high their marks of valor.

Of course, and this is easy to understand, lower indicators of daily threshing output are not always the result of inactivity. On the whole harvesting is proceeding in an organized manner. The weather gave Siberian farmers a good-weather "window" in late August-early September, and in 10 days two-thirds of grain crops were placed into windrows. After this, up to 70 percent of the combine fleet, which had achieved a daily growth in the pick-up of windrows and in direct combining of 100,000-105,000 hectares, was efficiently reassigned to threshing operations. Now in addition to the second a third special purpose goal has entered the picture--to increase the pace of grain deliveries with each passing day.

In northern Tarskiy Rayon rye has yielded a large grain output. In the OPKh [Experimental Model Farm] imeni Frunze the new Chulpan variety yielded 53 quintals per hectare. Here the harvest leader is the Kolkhoz imeni Lenin, which recently fulfilled its 4-year plan for the sale of grain. In recent

years in the northern rayons of the oblast farming has been moving toward coordination with the meat-dairy specialization of enterprises. The elements of a scientific and creative search are obvious. This is attested to in particular by the experience of the OPKh imeni Frunze, a standard enterprise for the zone. The introduction of mineral fertilizers according to a well-grounded norm, zonal technology and high quality field work resulted in a double-triple increase in yield. Now grain output per hectare exceeds 40 quintals. North of Tarskiy Rayon, in Znamenskiy Rayon, stationary grain threshing is being carried out for the first time.

An increase in the proportion of winter crops in the moist northern zone and in the neighboring northern forest-stepped is the direct path toward completing harvesting within a time frame that is favorable with regard to weather conditions. Increasing the procurement prices for rye stimulates enterprises to expand the sowing area for this crop and thus to increase sales of rye to the state. In this zone "gray grains" are more productive and of better quality than wheat.

Siberian farmers know how to harvest grains. But of course not all reserves in this plan have been utilized; the search for ways to decrease the duration of harvesting operations promises to guarantee complete preservation of the harvest. Moreover, of foremost importance is labor organization.

In Okoneshnikovskiy Rayon, where for the first time a yield surpassing 20 quintals of grain per hectare was achieved, links within the harvesting-transport complex are working according to a single contract. Accounts are kept on the basis of tons on the average per link and not individually by bunker. This experience was utilized for the first time 4 years ago by combine operator I. A. Fomichev of Chistovskiy Sovkhoz. Now 33 links in the rayon are following his example.

In Krestinskiy Sovkhoz I visited a similar subdivision, led by A. A. Patsko. All of the machine operators are happy with the new organization of labor; last year half of the sovkhoz's combine operators worked in this manner and harvested 65 percent of all grains. Unfortunately, in the oblast as a whole the organization of threshing according to a single order is being introduced without insistence, although labor productivity and the wages of combine operators are significantly higher in this case.

Wages should be discussed from another aspect. There was no talk about them either last year or the year before, when yield was not high. But today things are different. "With existing rates, it is more advantageous for combine operators to produce poor harvests," says the director of Yelizavetinskiy Sovkhoz, V. N. Seleznev. He presents facts from which I learn that last year with a harvest of less than 10 quintals per hectare by the best machine operators record daily threshing output equalled 50 tons after the pick-up of doubled up swathes, and that sufficient numbers of hectares were covered. Maximum wages reached 60 rubles per day. Today, with a yield of 20-30 quintals and with compact swathes every 5-6 meters, for the same threshing yield the combine operator is paid a maximum of 33 rubles.

This is not a local problem. It was especially urgent in 1979, when the oblast achieved record harvests. Part of it could not be collected prior to snow although at that time Omsk farmers sold the state 2 million tons of grain. The question arises: Can it be that the RSFSR Ministry of Agriculture is still not in a position to examine one of the most vital problems of the village?

The harvest on Siberian fields provides other lessons as well. Everyone, gladdened by the large harvest, knows well that at some point on the way to the elevator there could be an interruption in the flow of grain and thus in the course of harvesting operations. Today this will not happen in Krestinskiy, Russko-Polyanskiy or Sibiryak sovkhozes because these enterprises have the loading-unloading and cleaning means that modern grain production should have. Here is what these "means" include in Krestinskiy Sovkhoz--a bunker with a capacity of 500 tons with an attachment made from two joined ZM-100 grain cleaning machines, and three unloading points with norias. With the help of this not terribly intricate equipment the threshing floor can, in less than a day, receive, clean and send 1,000 tons of grain to the elevator, without a bit of manual labor.

But where are these "means" produced? Everything is done there with the help of the oblast Sel'khoztekhnika [Agricultural Equipment Association]. Some equipment--the ZM-100 machines, D-565 loaders--are exchanged for other equipment in grain reception enterprises. Sel'khoztekhnika would be inclined to help other enterprises as well if additional metal were allocated for this purpose.

In the oblast intermediate threshing floors and asphalt-paved platforms are being organized as a reserve for accelerating the pace of moving grain. This helps to deal with the shortage of transport vehicles. However, frequently there is nothing to equip these points with. Today highly productive and convenient loading-unloading and cleaning means are hardly ever delivered to agriculture via funds. Obtaining them is the privilege of the procurement ministry. But should it be this way?

Attempts at Greater Efficiency

Moscow SEL'SKAYA ZHIZN' in Russian 16 Sep 84 p 1

[TASS article, Omsk: "According to A Single Order"]

[Text] Combine operators of Mar'yanovskiy Rayon, who were first in the oblast to complete threshing, are preparing to travel.

It is said that no two harvests are alike. This year's brought the workers of the Omsk Irtysh regions, where grain fields extend over more than 2 million hectares, its own special features.

In order to complete harvesting operations more quickly, efficient measures were taken. Decreased idleness of combines was aided by the transition of all transport vehicle enterprises to work according to a single order. In

highly productive kolkhozes and sovkhozes intermediate grain-transfer platforms, located close to grain fields, are in operation.

Grain is being delivered to the state on a 24-hour basis. Seven of the oblast's rayons have already completed today's plan of grain deliveries. Seventy nine percent of strong and valuable wheats have been poured into state granaries.

8228

CSO: 1824/026

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST, PROCUREMENT PROGRESS IN KRASNOYARSK KRAY

Moscow SEL'SKAYA ZHIZN' in Russian 5 Sep 84 p 1

[Article by P. Zinkeyev, Krasnoyarsk Kray: "Grain from Yenisey Arable Lands"]

[Excerpts] Harvest Diary

Having cultivated a good harvest, the farmers of Krasnoyarsk Kray are striving to harvest it quickly and without losses and to pour more grain into state granaries.

In Shushenskiy Rayon the harvests are good for Siberian conditions. This year it is planned to thresh no fewer than 25 quintals of grain here and to sell not 25,800 tons, as foreseen by the plan, but more than 27,000.

Right now 19 harvesting-transport complexes are harvesting the grain.

Today's arable land both gladdens and alarms, I was told in the kray party committee, sovkhozes and kolkhozes. Farmers who armed themselves with scientific recommendations on the introduction of zonal systems, secured by progressive experience, cultivated an adequate harvest for local conditions. All prerequisites exist for producing over 16 quintals of grain on each of 2.1 million hectares and for selling 1,455,000 tons of it. There are weighty grains on the fields of Shushenskiy, Minusinskiy, Uzhurskiy, Nazarovskiy, Sharypovskiy, Novoselovskiy and other rayons. The Khakasian zone did not let us down this year either. But the maturation of crops is not uniform by far. It is this circumstance that inspires us toward a stricter approach to harvesting and to the precise and complete use of all resources.

Yes, the Siberian fall is rapidly over and it does not allocate a single day for oscillating. This year this is especially true--in the course of the summer nature did not provide enough warmth and maturation is behind schedule by 8-15 days. Here we have another problem--lodging of crops. But on the Yenisey there are no easy harvests, and many years of experience teach us that the one who wins is the one who maneuvers equipment and takes bad weather into account.

From among enterprises Nazarovskiy Sovkhoz, which produces over 40 quintals of grain from each of 19,500 hectares, serves as an example. In the Chulym area where this sovkhoz is located grains always mature later than in other

parts of the kray, but Nazarov workers succeed in taking the harvest in the shortest possible time. In other words, we have whom we can learn from. If only the desire existed. It is essential to do everything to have this valuable experience become part of the armament of all 911 harvesting-transport complexes and detachments that have begun harvesting operations. The task is to complete them at the most optimal time--in the course of 18 work days.

What is the basis for such a compressed schedule? After all, previously the harvest lasted up to 30 and more days, as a rule.

"The technical power of enterprises has grown significantly, and the fleet of machines has been renewed," answers the senior engineer of the kray association of Sel'khoztekhnika [Agricultural Equipment Association], L. D. Demko. "For this year's harvest the kray's kolkhozes and sovkhozes were sold 2,700 tractors, including 275 of the K-700 type, and 1,800 grain-harvesting combines, of which Sel'khoztekhnika enterprises assembled 640. Six hundred reapers and other technology have arrived. This enables us to decrease the load per combine from 246 hectares last year to 200."

It is true that perplexity was aroused by the fact that several dozen combines were being "maintained" in the commercial yard of the Kansk Sel'khoztekhnika at the start of harvesting operations. Aren't they needed? They are, of course, but this need evidently "dissolved" in the inertia of individual managers. The same has been observed in the preparation of Bogotol'skiy Grain Reception Point. It was during last year's harvest that it became clear that this weighty enterprise is lagging behind, and it was decided to install scales for large-capacity transport vehicles. The executors were the Krasnoyarsk-sel'stroy association [Krasnoyarsk agricultural building association] and kray production administrations of grain products. But the problems still remain there. Low performance discipline also explains the lags in the preparation of a drying enterprise at the Sharypovskiy Grain Reception Point. Grain suppliers have come across instances in which unloaded trucks were detained at the milling combine of the city of Krasnoyarsk. It is obvious that not all procurement services have taken up the initiative of grain drying workers of Krasnoturanskiy Rayon, who prepared for all aspects of grain reception operations in good time.

Aviation workers of Abakanskoye and Achinskoye enterprises have come to the aid of farmers now. They will carry out senikatsiya [Translation unknown] measures on 200,000 hectares to facilitate the accelerated maturation of grain crops. Highway workers have not remained in the wings either. Subdivisions of Krayavtodor [Kray motor vehicle roadway association] have prepared asphalt-paved floors on threshing floors and platforms costing a total of 12,500 rubles for the purpose of grain shipments; 535 kilometers of roads were subject to capital and intermediate repairs. The Dorspetsstroy trust [Roadway special building trust] made its contribution to the building of intra-enterprise roads.

City dwellers are participating in harvesting directly. Workers who know how to operate combines and other equipment have been formed into 120 harvesting-transport complexes, many of which are doing model work in harvesting.

Examples of these include the complexes of the combine plant, of the vehicle repair plant, of KrasnoyarskGESstroy [Krasnoyarsk hydroelectric power plant building association] and of the Shushenskoye association of Sel'khoztekhnika. But a rebuke is also appropriate--some people are inclined to think about the harvest as a picnic in a natural setting. Only this can explain the fact that in many complexes of city workers average productivity is almost half that of the output of village machine operators. I feel that in addition to trust there should be strict demandingness as well. The same is true for truck drivers who have come to help with harvesting--the level of truck use is very low.

The harvesting conveyor on fields near the Yenisey River is gathering strength. There is extensive use of combined direct combining with two-stage threshing, and a demonstration of Siberian persistance and skill, a striving not to give in to difficulties and an ability to collect the harvest. In this we have the guarantee of new achievements.

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CSO: 1824/028

MAJOR CROP PROGRESS AND WEATHER REPORTING

RAISED GRAIN SALES TO STATE IN THE ALTAY KRAY

Moscow SEL'SKAYA ZHIZN' in Russian 31 Aug 84 p 1

[Article by A. Torichko, Altay Kray: "From Morning Until Night": Reference articles JPRS UAG-84-038, 3 Oct 84 and JPRS UAG-041-84, 15 Oct 84 deal with similar material]

Excerpts This year, unstable weather held back the ripening of the grain crops in the Altay Kray. But we do have a crop. With the exception of certain rayons in the Kulunda Steppe region, the ears are of considerably better weight than those of last year. The chief concern at the present time is that of harvesting everything that has been grown.

The agricultural workers in Smolenskiy Rayon initiated a successful solution for this task. They reviewed their initial plans and undertook new and raised obligations: to supply the granaries of the homeland with 61,000 tons of grain -- one and a half times more than was called for earlier. The decision was made to over-fulfill the plan for 4 years.

The Altay farmers are hoping to be able to supply the state's granaries with a maximum quantity of grain. There are many examples attesting to this fact.

"While the crop was ripening" stated the director of the Altayskiy Sovkhoz V.G. Popov, "we reviewed our obligations. Initially we resolved to ship 60,000 quintals of grain to the elevator instead of the 40,000 quintals called for in the plan and now we have even changed our plan once again. We will ship 100,000 quintals of grain to the state's granaries and thereafter still sell 32,000 quintals of high quality seed to other farms."

The crops were knocked down and twisted by heavy downpours of rain, strong winds and hail. In the absence of eccentric reels and Morozov devices, there was nothing for the harvesters to do here. Extensive use is being made of ZhRB-4.2 harvesters for cutting down the grain and pulse crops which, in the opinion of the machine operators, shave the crops rather than cut them down. But there are also tracts on which even these harvesters must cut in the one direction or diagonally using the 1st low speed. Depending upon the prevailing weather conditions, two stage harvesting is being combined with direct combining.

The initiative displayed by the workers in Smolenskiy Rayon has found broad support at all kolkhozes and sovkhozes throughout the kray.

In the zonal region, the workers of which also intend to overfulfill their plan for selling grain to the state, we paid a visit to the fields of the Biya Sovkhoz. Ten combines which had been formed into three teams were slowly advancing along windrows of peas. The brigade leader, N.V. Sviridov, leisurely strolled from one unit to another checking upon the quality of the harvest work. And although the farm is successfully employing the spreader-hay lifter that was improved by combine operator G.K. Korolev in carrying out the harvest work, losses are still occurring.

"The pods crack open following rainfall" complained the brigade leader, "But nevertheless we are still obtaining 20 quintals per hectare. We are being assisted in this regard by the Skala and Rossiyanka wheat varieties, which promise to provide a yield of not less than 28 quintals per hectare.

The machine operators are working from morning until night. And sometimes they work at night. They are all aware that the grain must be harvested completely. Thus the grain growers on all of the kray's farms are working in a selfless manner. In particular, this holds true for the Pobeda Kolkhoz where 14 combine operators have already obtained more than 1,000 quintals of grain each. Almost 2,000 quintals of grain have been threshed by Ye.I. Borodin, V.K. Poletayev, V.Ya. Karl and the young machine operators V.V. Drepin and V.Ye. Likhachev. This year the kolkhoz intends to sell 59,000 quintals of grain to the state instead of the 32,000 quintals called for in the plan and to fulfill its 5 year grain plan in just 4 years. Every effort is being made to utilize each good hour of time to maximum advantage.

"Unfortunately, our Sel'khoztekhnika partners are not providing us with much assistance" complained the kolkhoz chairman N.I. Varnavskiy, "Quite often the combines lie idle waiting to be refueled, since the farm's only refueling truck is simply incapable of refueling all of the equipment on a timely basis. Nor do we have a welding unit and from year to year Sel'khoztekhnika is not responding to our requests for services."

"The supplying of fuel and lubricating materials is organized very poorly" added the RAPO /rayon agroindustrial association/ chairman P.P. Golinenko, "In order to prevent the harvesting equipment from lying idle, the farms in our rayon had to send gasoline trucks to Novosibirsk, a distance of 500 kilometers.

Similar complaints were heard in other rayons throughout the kray. The situation was further complicated by the fact that industrial enterprises throughout the kray furnished assistance to the grain growers in the form of 12,000 trucks, with almost just as many machines coming from other oblasts. This also required an increase in the deliveries of fuel.

The harvest operations in the Altay Kray are increasing in tempo. All of the harvesting-transport complexes, the structure of which includes more than 7,000 non-schedule teams, have joined in this campaign. They have already cut down more than 1.5 million hectares of grain crops. They have carried out threshing work on 700,000 hectares. The flow of grain to the elevators is increasing with each passing day.

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CSO: 1824/661

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST PROGRESS IN SIBERIA DISCUSSED

Moscow PRAVDA in Russian 30 Aug 84 p 1

Article by L. Ivanov

Excerpt The flow of grain is increasing in Siberia. Immediately following the eastern and piedmont zones in the Altay Kray, the farms in the Kulunda Steppe region and in the Rubtsovsk-Aleysk and Ob River zones joined in the harvest operations. The initiative displayed by the workers in Smolenskiy Rayon, who undertook to obtain 30 quintals of cereal grain from each hectare and thus compensate for the grain shortage experienced since the beginning of the five-year plan, has received broad support throughout the kray.

One feature of this current harvest period -- the campaign aimed at delivering high quality grain. The Altay grain growers intend to procure not less than 1.5 million tons of strong and durum wheat. Overall, the kray's workers have vowed to supply the state with 3.7 million tons of grain.

There is no such thing as an easy harvest in Siberia. Nor is this current year distinguished by good weather. Thus it is necessary to take advantage of the good "windows." But even under these conditions the harvest rates for the Altay Kray are quite good. The grain has been laid out in windrows on 1.2 million hectares. One half of this amount has already been threshed. Grain deliveries are already being carried out. Two thirds of the planned winter rye procurements have been delivered to the state granaries. The elevators have been prepared to receive the principal food crop -- wheat. Moreover, a large portion of the grain is being dried this year at the grain receiving points. The agroindustrial associations are coordinating the actions of the partners and striving to achieve a situation wherein the grain growers and procurement specialists work in better harmony with one another.

Nor have the city-dwellers ignored the concerns of the farmers. Industrial organizations and various enterprises throughout the kray supplied the kolkhozes and sovkhozes with 12,000 trucks and 42,000 workers, including 12,000 machine operators. And a chief concern is that of ensuring that the additional resources are utilized in a thrifty manner. As it turned out however, everything did not proceed smoothly. A number of the machines delivered to Kosikhinskiy Rayon turned out to be unsuitable for the transporting of grain.

Yes and the farms themselves tolerate mistakes at times. Prior to the commencement of the busy harvest period, one third of the combines at the

Proletariy and Avdeyevskiy sovkhozes were still in a state of disrepair. The harvesting units at the Pravdinskiy spetskhoz /specialized farm/ had not been equipped with grain lifters. Thus grain losses occurred during the harvesting of lodged grain crops. At times the farm leaders and specialists and also the rayon agroindustrial associations did not adequately take into account the peculiarities of the current harvest season. Direct combining was neglected on a number of farms, despite the fact that this method reduces grain losses during inclement weather.

One urgent problem -- a shortage of spare parts for the combines and GAS-53 machines and also a shortage of fuel. Urgent measures must be undertaken by RSFSR Goskomsel'khoztekhnika and Glavneftesnab and assistance provided for the masters of the Siberian fields.

The harvest operations have reached the fields in Tomsk, Kemerovo and Novosibirsk oblasts and also in Krasnoyarsk Kray. In all areas the grain growers are striving to complete their harvest work in a rapid manner and to supply the granaries of the homeland with as much grain as possible.

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CSO: 1824/661

MAJOR CROP PROGRESS AND WEATHER REPORTING

CORN PRODUCTION PROBLEMS IN UZBEK SSR SCORED

Moscow SEL'SKAYA ZHIZN' in Russian 18 Sep 84 p 1

Article by A. Uzilevskiy, Uzbek SSR: "Ears for the Silos, Silage for the Trenches" /

Excerpts/ The specialized brigades in Leninyulskiy Rayon were the first in the Surkhansherabadskaya Valley region to commence their harvest operations. The majority of them obtained 70 quintals of grain per hectare. Each day the machine operators in Termezskiy, Angorskiy and Dzharkurganskiy rayons are obtaining high outputs from their combines. All of the farms are participating in the work of selling grain corn to the state and the oblast as a whole has already completed two thirds of its state plan for corn procurements.

The specialized grain production farms are completing their corn harvesting work. The Sovkhoz imeni Ibn Seny in Nishanskiy Rayon in Kashka Darya Oblast has harvested a 1,000 hectare field, from which it obtained more than 3,000 tons of grain and 20,000 tons of silage bulk with ears of milky-waxy ripeness.

At the corn production Sovkhoz imeni Marshal Sokolov in Arnasayskiy Rayon, the combine operators assigned to the brigade headed by Mamasadyk Mamazununov set a fine example at the very beginning of the busy harvest campaign. They carried out the harvest work on their assigned area within a matter of a few days. They obtained 71 quintals of grain per hectare, thus surpassing the planned task by 16 quintals. The machine operators attached to the farm's harvesting-transport detachments undertook the task of completing their corn harvesting work on all 1,300 hectares as rapidly as possible. Immediately following the harvest, the fields will be plowed and the sowing of silage and winter grain crops carried out.

This serves to confirm the effectiveness of large-scale sowings of corn, both in terms of the grain yield per hectare and the organization of the harvest process. Unfortunately however, the corn sowings on a majority of the republic's farms are distributed among many tracts and there are many instances where these tracts are viewed as an additional responsibility of the cotton growing brigades. It sometimes happens that corn for grain is not grown in keeping with established crop rotation plans.

Despite the fact that in recent years the areas assigned for corn for grain have been increasing in size in Uzbekistan, an industrial technology has still not been developed for cultivating this crop under irrigation conditions and

highly productive local varieties have yet to be created. During this current summer, with more strict demands being imposed with regard to accurate accounting for the crop, these areas of neglect have become especially pronounced.

Grain corn has been harvested throughout the republic on more than one half of the areas and the per hectare yield is in excess of 36 quintals. It is lower in four oblasts. For example, the per hectare grain yield in Bukhara Oblast is 31 and in Kashka-Darya Oblast -- 24 quintals. The corn growers on many farms in the Fergana Valley are obtaining one and a half to two times more grain per hectare than the corn growers in Kashka-Darya Oblast. From a rayon standpoint, the statistical data is even more diverse. The cause of this situation has been uncovered -- there have been cases of reductions actually taking place in the yields. For example, let us take the Sovkhoz imeni Khamzy in Talimardzhanskiy Rayon: a stable yield of 25 quintals of grain per hectare was recorded here, despite the fact that a yield of 50 or more quintals was obtained in past years. No efforts have been undertaken aimed at reducing losses and only four Khersonets-200 machines were moved out onto the fields, despite the fact that the farm's combine pool was increased this season by eight such machines.

Nor can the grain corn harvest rates for the republic as a whole be considered as satisfactory. Of the 5,171 combines available, only 1,700 are participating in this work. The daily increase in harvested area does not exceed one and a half percent and the output per unit is 2 hectares. It is clear that with such rates the harvest work will be dragged out for a considerable period of time and that large losses will be inevitable.

Unfortunately, mention must be made of the fact that the harvesting of corn for silage has not been organized sufficiently well in all areas. The farms in Navoi and Khorezm oblasts and in the Kara-Kalpak ASSR have fallen seriously behind with regard to the average indicator for the republic. A difficult situation has developed at some sovkhozes of Uzglavzagotzhivprom. Not all of them have been adequately equipped with harvesting equipment, despite the fact that a sizable silage crop is on hand. By no means are all of the rayon associations of Goskomsel'khoztekhnika carrying out their contractual obligations with regard to furnishing assistance to the farms using their own specialized harvesting detachments. Thus in Akhangaranskiy Rayon in Tashkent Oblast, despite the existence of a contract, the rayon association does not have any silage harvesting equipment.

Fine grain corn and corn silage crops have developed in Uzbekistan. A need now exists for ensuring that the path leading to the granaries is as short as possible.

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CSO: 1824/052

MAJOR CROP PROGRESS AND WEATHER REPORTING

CORN CROP DEVELOPMENT IN UZBEKISTAN DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 19 Aug 83 p 2

Article by Ye. Aytmuratov, secretary of the Central Committee of the Communist Party of Uzbekistan: "Potential of the Corn Fields"

Text Farming results cannot be judged based upon the indicators for just one or two years. Thus we are analyzing the development of corn production in Uzbekistan over the past decade. For the republic, this period was characterized by large scale measures aimed at improving the branch. What were the results?

They are rather considerable. Compared to 1972 when the corn sowings for grain occupied 28,500 hectares throughout the republic, last year -- approximately 300,000 hectares. Ten years ago the farms in Uzbekistan obtained 31.4 quintals of grain per hectare and in 1982 -- 66 quintals. During the decade the gross yield of corn grain increased from 91,000 tons to almost 2 million tons. By what means was this increase achieved? A decisive condition was the party's increasing influence, from year to year, on the development of the branch and also the unremitting attention by the soviet and agricultural organs with regard to solving the practical problems of corn production. The experiment concerned with attracting the rural komsomol and all youth to performing work directly in specialized corn production brigades is considered by us to have been a success. It is a practical and responsible task. But from the very beginning the Central Committee of the Communist Party of Uzbekistan warned the local party committees and the leaders and specialists of agricultural organs, kolkhozes and sovkhozes that komsomol assistance in the production of corn will not release them from displaying concern for this crop, a very decisive one given our conditions.

An effective form for specialization in the production of corn was found. Shock work youth brigades were created on all of the cotton growing, animal husbandry and vegetable production farms. After a period of just several years, these specialized brigades had succeeded in almost doubling the corn yields.

Despite the fact that this was a considerable achievement, the republic's party organization nevertheless directed the attention of the agricultural organs and the komsomol to the serious deficiencies noted in the work. For example, there was a predominance of manual labor in the harvest operations.

Following the analysis, a new stage began in the organization of the branch -- a stage of intra-farm concentration in corn production and enlargement of the fields and specialized brigades. This work was carried out extensively during the 10th and current five-year periods. Subunits engaged in cultivating corn on 70-100 or more hectares of irrigated arable land replaced brigades and teams having sowing areas of only 25-30 hectares. This created more favorable conditions for mechanized operations. The brigades were supplied with soil cultivation, sowing and harvesting equipment. Assemblies are being used out on the fields this year which not only sow the seed but also ensure their accurate placement, with a simultaneous application of mineral fertilizers and herbicides. The principal bulk of the crop is gathered up by corn harvesting combines.

An important result of the increase in party and komsomol influence in agriculture has been the movement to obtain grain corn yields of 80-100 quintals per hectare. Initially this goal was achieved only by eminent experts -- Hero of Socialist Labor Nayni Mamatkadyrov of the Savay Sovkhoz in Andizhan Oblast, laureate of the State Prize of the USSR Dzhurakul Kushakov of the Kolkhoz imeni Navoi in Samarkand Oblast, Zul'fiya Pardayeva of the Karabag Sovkhoz in Kashka-Darya Oblast, Shirin Yusupova of the Kolkhoz imeni Lenin in Khoszheyliyskiy Rayon in the Kara Kalpak ASSR and a number of others. Last year, 201 komsomol youth collectives reached the 100 quintal level and 250 brigades achieved a yield of 90 or more quintals of grain per hectare. This summer 1,000 brigades, or one third of all of the corn growing youth collectives, have joined in the competition to achieve a record yield.

In recent years, branch development has involved the creation of specialized detachments, sectors and farms. Nineteen corn growing sovkhozes organized last year obtained an average yield of 66 quintals of grain per hectare.

For the 3d year of the five-year plan, the corn growers are striving not only to equal but even to surpass last year's results. The per hectare yield on many farms is in excess of 65-70 quintals.

The high economic value of corn, combined with the especially favorable conditions for cultivating it in the irrigated zone, attaches a degree of urgency to the task of accelerating its production on the fields in Uzbekistan. The possibility of doubling the gross yields of corn grain by the end of this current five-year plan is already being studied in the republic's party, soviet and agricultural organs.

The role played by the particular variety employed is of great importance in achieving this goal. However, the breeding of grain crop hybrids has been dragged out for dozens of years in the republic. Certainly, this has not halted the development of production operations. The need was recognized for using corn hybrids developed in other zones of the country. They made it possible to stabilize the average corn grain yields. Meanwhile, the scientists maintain that 100 quintal grain yields can definitely be obtained in our zone from the entire area sown in this crop. But this would require the use of hybrids possessing a high resistance against and adaptability to a hot dry climate and other environmental influences. A group of plant breeders is at work attempting to create such hybrids for the republic.

The usefulness of cooperative efforts by various scientific collectives is beyond dispute and yet it is regretted that there is no single specialized scientific center in the republic that is capable of improving the plant breeding operations, creating a long-term plant breeding stockpile or establishing a scientific basis for the seed production system.

We assume that the union Ministry of Agriculture and VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/ will return to our proposal in this regard. Time itself requires a decisive conversion over to new forms for organizing science and bringing it closer in line with production. This is emphasized with special force in the USSR Food Program, adopted during the May (1982) Plenum of the CPSU Central Committee. In this instance, a need exists for the creation within the republic of a scientific production association which, in addition to a scientific element, would have specialized seed production farms and a seed processing plant.

The equipment for corn fields constitutes a special problem and one which should be discussed in more detail. Even the new Khersonets-200 machine is not suitable for operation on highly productive fields and great losses are tolerated. On the whole, it can be stated that we still do not have a complex of machines for corn production. Certainly, such a complex must be developed based upon the principle of equipment standardization. But in the process it will be necessary to develop and create a system of specialized instruments and units precisely for the corn production branch. It is our opinion that the scientists, design bureaus and machine building departments should participate more actively in this work. Meanwhile the republic's kolkhozes and sovkhozes are still experiencing an acute shortage of machines for use out on the corn fields. This shortage is especially acute during the harvest period.

An industrial technology for corn production is an ambiguous concept for all zones of the country. The conditions found on non-irrigated and irrigated lands vary and the growing season potential in the central and southern regions also differs. For example, Uzbekistan requires a more objective scientific and practical justification for the place occupied by corn in a cotton complex. Here we have in mind hundreds of thousands of irrigated hectares occupied by corn, which must serve as the immediate predecessor crop for cotton.

Corn production surpasses the other branches of agriculture in its lack of cadres of specialists. There is not one VUZ in the country which offers an expanded program in corn production or specialization in this branch. A well thought out system is needed for training highly skilled corn growing specialists.

Among the people, corn is referred to as a herculean crop. But it will become truly herculean only if proper concern is displayed for its potential. An increase in the production of corn will constitute a practical step taken along the path leading to implementation of the country's Food Program.

7026
CSO: 1824/052

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

GRAIN PROCUREMENT CONTINUES--Barnaul (TASS)--A million tons of grain from the new harvest have been poured into state granaries as of yesterday by Altay farmers. The flow of grain in the kray is increasing with each passing day. This is being facilitated by shock work by all members of harvesting operations, who have achieved the uninterrupted conveyor "field-threshing floor-elevator." Over 1,500 harvesting-transport complexes are working in two shifts in the fields. Machine operators are extensively utilizing the watch method and brigade detachments. Drivers deliver grain to reception points on a 24-hour basis according to hourly schedules. At all of the kray's elevators procurers are especially strictly controlling strong and valuable wheat varieties. Together with kolkhoz and sovkhoz specialists they are checking grain quality directly in enterprises with the help of mobile laboratories on grain routes; workers are making sure that varieties are not mixed and that grain coming to the state granary is grouped according to the quality of its preparation. [Text] [Moscow TRUD in Russian 12 Sep 84 p 1] 8228

FIRST MILLION DELIVERED--Barnaul, 11 [Sep]--The first million tons of Altay grain are in the state's granaries! The kray's farmers achieved this success thanks to selfless labor in the fields and on threshing floors and grain routes. Workers of Shipunovskiy, Novichikhinskiy, Sovetskiy, Ust'-Pristanskiy, Topchikhinskiy, Aleyskiy, Kytmanovskiy, Krasnoshchekovskiy and many other rayons provide examples of a high degree of organization in work. [By A. Torichko] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 12 Sep 84 p 1] 8228

HARVEST PACE INCREASING--Barnaul, 20 [Sep]--Grain farmers of the Altay are threshing grains on the fourth million hectares. Using every hour of good weather in a business-like manner and skilfully maneuvering equipment, harvesting-transport links are achieving success in the harvest. The leaders are Shipunovskiy and Mikhaylovskiy rayons, which were first in the kray to complete harvesting. Close seconds are the machine operators of Aleyskiy, Kulundinskiy, Mamontovskiy, Ust'-Pristanskiy and other rayons. At the same time the flow of grain into state granaries is increasing. The farmers of Altayskiy and Zonal'nyy rayons were the first to report about completing plans for the sale of grain to the state. Moreover, many enterprises here are delivering high quality grain. Two-thirds of the wheat arriving at reception points belongs to the categories of strong, durum and valuable. Of 34,000 tons of wheat that have arrived from the enterprises of Slavgorodskiy Rayon, 29,000 tons have received a high evaluation for gluten content. Having set

the goal of pouring no fewer than 3 million tons of quality grain into state granaries by the end of September, Altay village workers are increasing the pace of grain procurement. [By A. Torichko] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Sep 84 p 1] 8228

FINAL PHASE OF HARVESTING-- Barnaul, 22 [Sep] (TASS)--Harvesting operations in the Altay have reached their final phase. Grains have been harvested from 4 million hectares; on over half this area they have been threshed. Having sent freed combines to eastern parts of the kray, enlarged complexes have begun harvesting the last hectares of crops. During this final phase of harvesting there has been a significant increase in the load placed on the transport conveyor. It is working without interruption and with a high degree of productivity in Kosikhinskiy Rayon. A center for managing shipment of agricultural loads created here has developed optimal routes for the movement of transport vehicles; with the aid of the dispatcher service it efficiently directs a mobile detachment of large-capacity trucks and tractor-trailer rigs to enterprises where enough grain has been accumulated. Following hourly schedules loads reach grain reception stations and elevators without delay. This has allowed us to eliminate idleness in equipment and to curtail the time needed for loading and unloading grain. Each truck for the central delivery of loads moves 26-30 tons of grain daily. Similar management centers for shipments exist today in all regions. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 23 Sep 84 p 1] 8228

HARVEST WORK NEARING END--Barnaul, 27 [Sep] (TASS)--Fall bad weather did not ruin the plans of Altay grain farmers. They continue to increase the pace of sales of grain to the state. Success at the finish line of the harvest has been greatly facilitated by the precise work of grain procurers. Having increased the capacities of the drying industry and having organized three-shift schedules, they made a transition to the reception and drying of grain on a 24-hour basis. Strong wheats are being specially controlled. Over 300,000 tons of it, significantly more than planned, has already arrived at state granaries. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 28 Sep 84 p 1] 8228

GRAIN PROCUREMENT--Krasnoyarsk, 14 [Sep]--The first in the Yenisey region to fulfill the grain procurement plan was Krasnyy Khleborob Kolkhoz of Ilanskiy Rayon. It traditionally produces a large harvest of grains--each hectare yields over 30 quintals. About 3,000 tons of grain have been delivered to the grain reception point, as compared to the planned 2,500 tons. The enterprises of Kanskiy, Sukhobuzinskiy, Yermakovskiy and other rayons in the kray are also successfully carrying out grain sales to the state. No fewer than 1,455,000 tons of grain will be supplied by Krasnoyarsk grain farmers this year. [By P. Zinkeyev] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 15 Sep 84 p 1] 8228

GRAIN PROCUREMENT PROCEEDING SUCCESSFULLY--Krasnoyarsk, 27 [Sep]--A good harvest is being produced today by Iskra, Nazarovskiy, Kanskiy, Vladimirovskiy, Uchumskiy, Yesaul'skiy and Minusinskiy sovkhozes. During the last 10 days the pace of grain procurement has increased in the kray. State granaries have received 638,000 tons of grain, which is 44 percent of the plan. The collective of Nazarovskiy Sovkhoz has fulfilled the first precept. Over 15,000 tons of grain have been delivered from here. The enterprises of Sukhobuzimskiy, Kanskiy, Ilanskiy and other rayons are close to completing their plans. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 28 Sep 84 p 1] 8228

IN TWO SHIFTS--Tomsk, 2 Jun 84--The farmers in Tomsk Oblast are completing their sowing of cereal grain crops and commencing the sowing of corn and other forage crops. The work out on the fields has been organized in two shifts and it is being carried out both day and night. The majority of the oblast's machine operators are working on the basis of the brigade contract method. Many farms in Kozhevnikovskiy, Tomskiy, Molchanovskiy, Shegarskiy and other rayons have completed their grain crop sowing operations. The machine operators, upon completing their sowing work, are following the initiative displayed by collectives in Asinovskiy Rayon and are making earnest preparations for the haying season -- they are adjusting the feed procurement equipment and ensuring that the units to be used for the preparation of vitamin grass meal are in good operating condition. /by A. Solov'yev/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 3 Jun 84 p 1/ 7026

CORN SEED SHIPMENTS INCREASED--Alma-Ata--The republic's farmers have commenced selling corn seed to the state. This year the corn growers intend to ship 140,000 tons of seed for valuable high yield varieties and hybrids to their colleagues -- 20,000 more tons than last year. [Text] [Moscow TRUD in Russian 19 Sep 84 p 1

SEED FOR 2.5 MILLION HECTARES--Taldy-Kurgan, 11 Oct--In all, the farms in Panfilovskiy Rayon will supply the grading plants with as much seed as will be required for sowing 2.5 million hectares next year. /by Ye. Shley/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 12 Oct 84 p 1/ 7026

GRAIN SALES TO STATE--Taldy-Kurgan Oblast--The mass harvesting of corn for grain has commenced out on the plantations in Panfilovskiy Rayon. The farmers are devoting a maximum amount of effort in the interest of ensuring that as much hybrid and high quality seed will be placed in storage in the state's granaries. Two hundred and twenty combines have been moved out onto the fields. Approximately 3,000 motor vehicles and tractors with wagons are engaged in transporting the crop. This year an excellent crop is on hand in all areas in the Dzharkent Valley. At the present time, an average of 64 quintals of amber grain is being obtained here from each hectare, considerably more than the figure for last year. The majority of the rayon's teams and farms have examined their former obligations and have undertaken new and raised ones. This year the Panfilov corn growers have resolved to sell 4 million poods of amber grain to the state for the very first time. /by M. Davidovich/ /Excerpts/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 22 Sep 84 p 1/ 7026

DESPITE ADVERSE WEATHER--Chimkent Oblast--The profound changes taking place in the oblast's grain economy are especially apparent in Kzylykumskiy Rayon, which has become the largest producer of hybrid and high quality corn seed. In 1978, corn occupied only 3,700 hectares on farms throughout the rayon and this year -- 14,900 hectares. And although a scarcity of moisture and unprecedented heat during the month of July seriously affected the status of the sowings, nevertheless the rayon's workers succeeded in supplying the state with 39,000 tons of corn grain -- twice as much as called for in the task. /by A. Utyaganov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 5 Nov 83 p 1/ 7026

CORN GRADING PLANTS--Alma Ata--The Chundzhinskiy Corn Grading Plant, which has just been placed in operation, will aid in accelerating by twofold the preparation of the corn seed. Yesterday the first batch of high grade seed was shipped from here to the northern oblasts of Kazakhstan. During the course of

a season, this enterprise will improve 5,000 tons of amber grain to a high sowing condition. The corn grading plants in the southern part of the republic have expanded their production capabilities by a factor of almost 1.5. /Text/ /Moscow TRUD in Russian 26 Nov 83 p 1/ 7026

MAINLY HIGH GRADE CORN--The corn harvest work is in full swing on the plantations in the Dzharkentskaya Valley. Here the farms must harvest their crop from 36,000 hectares. It consists mainly of high grade and hybrid corn for seed and commodity grain. Panfilovskiy Rayon occupies 1st place in Kazakhstan in the production of such grain. /Excerpt/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Oct 84 p 1/ 7026

CORN HARVEST COMMENCES--Dzhizak--The Dzhizak Steppe region has become a large producer of corn grain. The harvesting of the crop, grown on virgin lands, has commenced here. This year corn has been sown in the Dzhizak Steppe region on approximately 30,000 hectares. In addition to aiding the virgin land farms in the development of animal husbandry, this crop is also promoting improvements in soil fertility and also in raising the return from reclaimed lands. /Text/ /Ashkhabad TURKMENSKAYA ISKRA in Russian 9 Aug 84 p 1/ 7026

PRODUCTION LINE TECHNOLOGY--Tashauz--The farmers in the northern Tashauz Oasis in Turkmenistan have commenced harvesting their grain corn using a production line technology. The machine operators for 100 harvesting-transport complexes throughout the oblast have moved their equipment out onto the fields. Repair brigades have been created in all of the detachments, teams for providing cultural and domestic services have been formed and a schedule for double-shift operations has been approved. This year the oblast's corn growers must harvest this crop on 12,500 hectares. /Text/ /Moscow TRUD in Russian 14 Sep 84 p 1/ 7026

AZERBAIJAN CORN HARVEST--Belokany (Azerbaijan SSR)--The mass harvesting of grain corn has commenced in Azerbaijan. Specialized corn growing brigades and teams, all operating on a collective contract basis, have introduced the industrial technology into operations on almost all of the fields. /Text/ /Moscow TRUD in Russian 3 Oct 84 p 1/ 7026

TRANSPORT-HARVESTING COMPLEXES--Tomsk, 29 Aug--Three hundred machine operators from Saratov Oblast, who came to provide assistance to the farmers in the Ob River region, have joined in the Siberian grain harvest campaign. The Tomsk authorities made new grain harvesting equipment available for the Volga workers and they also provided them with fine living conditions. A fine harvest of wheat, rye, oats and barley is at hand on the local fields. An around-the-clock work regime for 280 transport-harvesting complexes, in which the Saratov machine operators are included, will make it possible to harvest the grain crops from 350,000 hectares prior to the onset of the cold weather. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 30 Aug 84 p 1/ 7026

HIGH WORK RATES--Barnaul, 29 Aug--The Altay machine operators are harvesting grain crops on their second million hectares. The grain obtained from more than one half of the mown areas has been threshed. The harvest tempo is increasing with each passing day. Immediately following the eastern and central regions, the farms in the Rubtsovsk-Aleysk and Kulunda Steppe regions -- the principal suppliers of strong and durum wheats -- commenced their mass harvesting of grain crops. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 30 Aug 84 p 1/ 7026

SEMIPALATINSK WHEAT HARVESTING--Semipalatinsk, 21 [Sep]--After the Urdzharskiy, Chariskiy and Zharminskiy farmers, the grain growers of Ayaguzskiy Rayon have fulfilled the plan for the sale of grain to the state. They have delivered more than 40,000 tons of grain to the granaries of the motherland. But the flow of grain has not declined. At present, the Ayaguzskiy elevator is operating around the clock. The grain is being delivered here according to hourly schedules. [V. Yelufimov, SEL'SKAYA ZHIZN' Correspondent] [Text] [Moscow, SEL'SKAYA ZHIZN' in Russian 22 Sep 84 p 1] 10272

TSELINOGRAD WHEAT HARVESTING--Tselinograd Oblast--In Makinskiy Rayon the grain harvest has been less than expected. On a majority of farms it is within 8-10 quintals per hectare. The grain growers are making every effort within the shortest time and without losses to bring in the crop while the procurement workers are doing the same to promptly receive, process and dispatch the grain to the required destinations. There have been no major failures at any single section of the conveyor line of field--threshing floor--elevator. The center for controlling the movement of grain has ensured a steady shipping rhythm. Harvesting is in full swing. Each day the flow of grain to the grain receiving enterprises has been rising. While in the previous 5 days an elevator received 10,000 tons of grain, during the current one 23,000 tons will already be delivered here. Faithful to its word, the collective of procurement workers is doing everything to promptly receive and store the grain. [By I. Yarovskiy, KAZAKHSTANSKAYA PRAVDA Correspondent] [Excerpt] [Alma-Ata KAZAKHSTANSKSYA PRAVDA in Russian 14 Sep 84 p 1] 10272

WHEAT HARVESTING IN PETROPAVLOVSK--Petropavlovsk--Harvesting in the oblast has reached its greatest intensity and over the day the equipment operators mow 65,000 hectares of cereals. Threshing will soon be carried out. Harvesting work is being carried out on the second million hectares. Correctly chosen tactics has helped shorten the time. Each field has its own "feel." This has required a creative search, boldness and individual harvesting techniques from the equipment operators. Along with two-phase reaping they are also widely using direct combining. Every 300 combines out of 400 have been converted to threshing and this has increased the flow of grain to the threshing floors and elevators. The 5-day quota has been overfulfilled for the sale of grain to the state by the grain growers of Bulayevskiy Rayon, where the cereals are being threshed on the last third of the area. [KazTAG Correspondent] [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 14 Sep 84 p 1] 10272

EXTRA WHEAT IN PETROPAVLOVSK--Petropavlovsk--The return from the fields in Moskovskiy Rayon has been substantial. On Tarangul'skiy, Zagradovskiy and imeni Komarov Sovkhozes, each hectare of wheat has produced 20 quintals of grain. The grain growers have revised their obligations and have decided to deliver to the state almost a million puds more grain than was previously planned. The moisture-retaining techniques, the careful tending of the plantings and the scheduleless organization of labor have helped raise the crop. Three-quarters of the arable land has been assigned to the brigades and teams which have

converted to a collective contract. [KazTAG Correspondent] [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 Sep 84 p 1] 10272

UST-KAMENOGORSK WHEAT HARVESTING--Ust-Kamenogorsk, 11 [Sep]--The collective of the Tavrichskiy Rayon Special Economic Association has been the first in East Kazakhstan to fulfill the plan for the sale of grain to the state. More than 9,000 tons of wheat have been dispatched to the elevator. Until late last evening vehicles carrying grain were traveling along the roads of Glubokovskiy Rayon. [M. Novikov, by telephone] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 12 Sep 84 p 1] 10272

PAVLODAR WHEAT HARVESTING--Pavlodar--Reaping on the fields of Pavlodarskiy Rayon in the Irtysh area is close to ending. Many farms this year have raised a good crop and at present the main concern of the farmers is to dispatch a maximum amount of grain to the state granaries. The first to meet the plan for the sale of grain were the grain growers of Pavlodarskiy Rayon. The grain being delivered to fulfill the increased obligations continues to move to the elevator from the threshing floors of the Presnovskiy and Zarya Sovkhozes and the kolkhozes imeni Tel'man and imeni Kirov which are located here. [A. Kostyukov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 19 Sep 84 p 1] 10272

BEET SOWING COMPLETED--Grodno--After completing their sowing work during the best periods, the beet growers in Grodno Oblast commenced cultivating their plantations. Immediately following the pre-seedling harrowing, the machine operators began loosening their inter-row spacings. [Text] [Moscow TRUD in Russian 18 May 84 p 1] 7026

BEET PRODUCTION PLAN--Minsk--The farms of Belorussia have formed more than 300 all-round technological detachments for harvesting the sugar beets. This year the republic's beet growers have vowed to supply more than 1.4 million tons of raw material for processing -- considerably more than last year. [Text] [Moscow TRUD in Russian 16 Sep 84 p 1] 7026

SUGAR BEET CREWS FORMED--Minsk--The Belorussian farms have completed forming their crews for the cultivation of sugar beets. Tens of thousands of hectares have been set aside for this crop and approximately one half of the areas has been assigned to contractual teams. The plantations are located close to the processing plants. The republic's beet growers intend to obtain approximately 1.5 million tons of the high quality raw material -- considerably more than last year. [Text] [Moscow TRUD in Russian 27 Mar 84 p 1] 7026

BEET GROWER CONCERNS--The farms in Minsk Oblast, where the "sweet roots" will be cultivated, have concluded agreements with the Slutsk Sugar Refining Combine. Approximately 50 kolkhozes and sovkhozes have vowed to sow this industrial crop and to tend the plantations during the best periods. The combine's workers are prepared to furnish assistance to the farmers during the busy harvest period. The agronomic services of the republic's rayon agro-industrial associations have examined the sugar beet sowing areas. Today they are being concentrated mainly around four processing enterprises and they consist of mineral soils. The experience of past years has shown that such soil ensures a high sugar content in the roots. Today the crop is being grown on more than 52,000 hectares. Approximately one half of the land is assigned to contractual teams. This year the plans call for approximately one and a half million tons of raw material to be obtained for processing -- considerably more than last year. [Text] [Minsk SEL'SKAYA GAZETA in Russian 11 Apr 84 p 3] 7026

BEET HARVEST PLANS--The republic's farms have completed forming their all-round technological detachments for harvesting the sugar beets. The rainy summer has delayed somewhat the ripening of the plantations. And in order for the roots to achieve the desired sugar content, the farmers applied additional top dressings and they tended the sowings, which occupy more than 53,000 hectares, during the best periods. More than one half of the areas will be harvested by combines, since the pool of harvesting machines has been augmented considerably. The farms have been supplied with new loaders. "We have maintained close contacts with our allied workers -- the processing enterprises -- throughout the entire season" stated the chief of the Department of Industrial Crops of the BSSR Ministry of Agriculture A.I. Karchevskiy, "They furnished assistance to the kolkhozes and sovkhozes in the form of equipment during the busy period of field operations. The agronomic services of the farms, jointly with the plant specialists, carried out constant inspections of the sowings. As a result, those sectors which must be harvested first of all have now been defined. Analysis has also shown that in some areas there is no need for haste. The roots have only started to increase in weight and they are capable of developing a high sugar content. The beet growers of Belorussia will ship more than 1.4 million tons of raw material for processing and this is considerably more than last year. /by S. Polyakov/ /Text/ /Minsk SEL'SKAYA GAZETA in Russian 19 Sep 84 p 1/ 7026

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CSO: 1824/014

LIVESTOCK FEED PROCUREMENT

LAGGING TAJIK FEED PROCUREMENT EXAMINED

Seminar Discusses Problems

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 22 Aug 84 p 1

[Article: "Utilizing Progressive Experience/Shock Front for Feed Procurement!"]

[Excerpts] Dangara--this is where the republic seminar was held that was devoted to questions of procuring, processing and increasing the use effectiveness of feed and on improving its quality.

This year as a result of unfavorable weather conditions underproduction in feed is expected. This is why questions of the effective utilization of all existing resources, the preservation of feeds and the improvement in their nutritive value are urgent.

Treatment and enrichment of feeds with additives are very important. An effective method for improving the nutritive value of straw and other inferior feeds is chemical treatment with alkalis and quick lime according to the ensilage method with simultaneous enrichment with nitrogen and mineral supplements. This method enables us to increase the nutritive value of feeds by a factor of 2 and more, to achieve complete consumption, to avoid losses and to significantly replenish feed resources. This is especially important for the grain farming zones of the republic and for enterprises having large quantities of inferior coarse feeds. This method has been used successfully for many years in XXII Parts"yezd sovkhoz of Dangarinskiy Rayon where the seminar was held. Its participants became acquainted with the technology of steaming feeds, of preparing liquid feed mixtures enriched with feed supplements and microelements, with various methods of processing feeds and with methods of preparing them for feeding. Sovkhoz specialists demonstrated equipment which does not require the building of expensive structures. It could be made in any enterprise and on every farm. As a result, inferior feeds, all types of wastes from field-crop cultivation and wild grasses are utilized with the greatest return. This enables us to increase milk yields and weight gains and to decrease the cost of livestock production.

Seminar participants exchanged work experience on preparing and processing feeds. At the seminar, emphasis was placed on the thought that this year what is necessary is especially strict accounts and concern about the effective use of every kilogram of feed.

The procurement of succulent feeds is now in full swing. Specialists must strictly adhere to technology, extensively utilize chemical preservatives and enrich all forage with feed supplements. It was noted that in many enterprises technology and mechanisms are not always utilized effectively. Due to the shortage of spare parts they often remain idle, as a result of which feeds are given to animals in unprepared form, are assimilated poorly and become waste products in inordinate numbers.

At the seminar there was a discussion about the great significance of using feed phosphates, which increase the biological full-value of the ration and improve the animal's ability to digest the feed. But there are still cases in which feed phosphates are used not according to their purpose, but as fertilizers.

A large reserve for replenishing feed resources is the cultivation of natural pastures, which enables us to increase their productivity by several times. In places where attention is given to this, pastures become the basic feed base for range livestock raising. However, the experience of leaders related to the transformation of large land areas into highly productive meadows and haylands is being introduced extremely slowly.

It was noted at the seminar that enterprises are still introducing progressive methods of feed procurement insufficiently and that they are utilizing poorly the method of hay preparation using shaded drying, active ventilation and other progressive technologies, with the help of which it is necessary to prepare no fewer than 15 percent of procured hay this year.

Enterprises lose a great deal due to delays in the harvesting of seeded feed crops. As a rule, harvesting of alfalfa is begun after the very best time--mass budding--is over.

An important reserve for replenishing feed stores is the sowing of intermediate crops such as perko and rape seed. In this case, the enterprises have the opportunity to utilize the predecessors of cotton and seed corn for green forage in early spring.

Participating in the work of the seminar were the first secretaries of rayon party committees, chairmen of city and rayon executive committees, senior RAPO [Rayon Agro-Industrial Association] specialists, directors and specialists of sovkhozes and kolkhozes in Kulyab Oblast, leading specialists of the agricultural administrations and sel'khoztekhnikas [Agricultural Equipment Association] of Kurgan-Tyube and Leninabad oblasts as well as of regions subordinate to the republic and scientists.

Deputy chairman of the Tajik SSR Council of Ministers A. N. Maksumov spoke at the seminar. The first secretary of the Kulyab Oblast party committee, I. Kh. Khayeyev, participated in the work of the seminar.

Feed Supply Overview

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 8 Sep 84 p 1

[Article: "What Has Been Placed in Stacks and Trenches?/ Agricultural Overview: Feed Procurement"]

[Text] In early June of this year the workers of the agro-industrial complex of Fayzabadskiy and Khovalingskiy rayons stepped in with the initiative on further increasing production, procurement and quality of feeds. Fayzabad workers pledged to store 67,000 tons of coarse and 20,000 tons of succulent feeds for the overwintering of livestock. Now almost 300 tons of hay and haylage more than envisaged by the plan have been placed in stacks and trenches. Khovaling workers are also moving persistently toward their goal. They have covered their quota concerning coarse feeds. Prior to the fulfillment of obligations they must store a little over 7,000 tons of hay and haylage.

As far as silage is concerned, there is still time. In both rayons corn harvesting has just begun. Fayzabad and Khovaling workers intend to fill all available trenches with silage and to fulfill their obligations concerning the procurement of succulent feeds.

The experience of the initiators of republic competition, the obligations of which were approved by the buro of the Tajik CP Central Committee, attests to the fact that with the proper organization of feed production it is possible to create the necessary reserve of forage under any circumstances. This is also attested to by the achievements of feed procurers of Kulyab Oblast and Komsomolabadskiy, Garmskiy, Leninskiy and Ordzhonikidzeabadskiy rayons, which surpassed quotas in procurement of coarse feeds. But compared to the achievements of leaders, the indicators of other rayons and oblasts look rather pale.

As reported by the republic's TsSU [Central Statistical Administration], as of early September the quota for the procurement of coarse feeds was fulfilled by only 52 percent in the enterprises of the GBAO [Gorno-Badakhshan Autonomous Oblast] and by 62 percent in Leninabad Oblast. It is already fall outside and it is feared that in the enterprises of these oblasts not all farms and feeders will have enough hay and haylage during the winter.

The slow pace of work in the enterprises of Gissarskiy and Dzhirgatel'skiy rayons is also cause for concern. Here 78 and 84 percent of planned quotas respectively have been achieved with regard to procurement of coarse feeds. In addition to seeded grasses, these rayons have extensive natural haylands and only the inertia of feed procurers can explain the serious lags in procurement of forage.

Indicators for the republic as a whole are also not satisfying. The plan for procurement of coarse feeds has been fulfilled by only 88 percent. Stacks and trenches have 155,000 tons less hay and haylage than at the same time last year.

Corn harvesting is proceeding very slowly everywhere. This is why even in Kurgan-Tyube Oblast the plan for the storage of silage has been fulfilled only by half and by even less in Leninabad Oblast--22 percent, in Kulyab Oblast--by 46 percent, in Leninskiy Rayon--by 31 percent, in Tursunzadevskiy and Gissarskiy rayons--by 39 percent and in Ordzhonikidzeabadskiy Rayon--by only 11 percent.

In the republic as a whole 77,200 tons of all types of forage have been procured in the republic, and if we consider this per standard head, this is 1.8 quintals of feed units less than at the same date last year. In Fayzabad-skiy and Komsomolabadskiy rayons the indicators are higher. In the other rayons and oblasts it is lower than last year.

We know how valuable grass meal is to livestock raising, but there are great lags in its production as well. Currently not a single oblast, nor a single rayon of republic subordination has fulfilled its quota. In the republic as a whole its production is 2,500 tons less than last year.

What is the reason for the serious lags in feed procurement? Weather conditions had their effect, of course. During this season on large areas the grass stand was poor and there was an underproduction of large amounts of hay from natural haylands. But there is another reason--poor care for alfalfa stands and a decrease in their productivity. In the enterprises of Kurgan-Tyube Oblast, for example, there are few natural haylands and all hope is placed on alfalfa fields. But here is what happens. Last year and this year there were 4.9 harvests here, but this year 25,400 tons of coarse feeds fewer were produced than last year.

Under these conditions all violations related to the laying in and storage of feeds leading to decreases in quality are especially intolerable. In the enterprises of Shaartuzskiy Rayon of the 11,000 tons of haylage checked, 79 percent was placed in the poor quality category. In the enterprises of Kabodiyenskiy Rayon poor quality haylage is placed in storage. In Gissarskiy Rayon after laboratory analysis almost half of the 224 tons of vitamin-enriched grass meal was identified as of poor quality.

The directors of kolkhozes, sovkhozes, inter-farms and RAPOs must take additional measures to replenish forage stocks, utilizing all wastes from vegetable farming and the food industry for this purpose. In cotton raising regions before the end of the season it is essential to produce at least two, and in other regions--at least one, full-value alfalfa harvest. At the same time there should be an organization of procurement of camel's thorn [yantak], club grass and other wild grasses. The more feed we can procure now, today, the more successful overwintering will be.

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CSO: 1824/022

LIVESTOCK FEED PROCUREMENT

UDC 636.084

EVALUATING NUTRITIVE VALUE, EFFECTIVE USE OF FEED

Moscow ZHIVOTNOVODSTVO in Russian No 9, Sep 84 pp 5-7

Article by V. V. Shcheglov, I. G. Pivnyak and I. P. Dukhin, professors, Ye. A. Makhayev, candidate of agricultural sciences, and V. A. Krokhina, doctor of agricultural sciences: "Organization of Efficient Feeding of Farm Animals"

Text The intensification of animal husbandry has necessitated the solution of a number of problems concerning the theory and practice of animal feeding. The following are the most urgent: development of a more efficient system of energy evaluation of the nutritive value of feed meeting modern requirements and of detailed, new feeding norms with due regard for the physiological state, level of productivity and conditions of animal keeping; improvement in the formulas of mixed feed and protein-vitamin additives ensuring a minimal expenditure of grain concentrates; development of formulas of premixes for the balancing of rations and mixed feed; search for and approval of new sources of mineral substances, vitamins, antibiotics and other biologically active substances.

VIZh All-Union Order of the Red Banner of Labor Scientific Research Institute of Animal Husbandry, as the leading institution, headed the coordination of this research.

As a result, a new system of evaluation of the nutritive value of feed and setting of feeding norms for farm animals in terms of metabolizable energy was developed. A draft of a standard of an energy feed unit in joules was prepared.

The new approach to the evaluation of the nutritive value of feed in terms of energy and of the setting of feeding norms for animals makes it possible to forecast the efficiency of feed utilization and the balance of rations with due regard for the types of animals. In accordance with the new system of evaluation the energy value of coarse feed for ruminants has been increased, which makes it possible to organize its more efficient utilization.

The changeover to the system of feed evaluation and setting of feeding norms for animals according to the energy feed unit will lower the expenditure of concentrates in hog and sheep breeding by 10 to 15 percent.

VIZh together with the country's other scientific institutions developed detailed, new feeding norms for all types of production and sex-and-age groups of animals ensuring high-grade feeding and a guaranteed high level of productivity:

an annual milk yield of 5,000 to 7,000 kg, an average daily gain in the live weight of young cattle at the level of 1,200 to 1,300 grams, of hogs, 750 to 800 grams and of sheep, 200 to 250 grams and a wool clip in terms of washed fiber totaling 3 to 3.5 kg (in the presence of a genetic potential). The number of standardized indicators was increased from 6 to 23-30. However, such an increase in them should not complicate the work of zootechnicians and farm specialists, because most indicators will be taken into consideration during the preparation of mixed feed, additives and premixes. The norms were examined by the Scientific and Technical Council of the USSR Ministry of Agriculture and recommended for introduction into production.

The balancing of rations according to detailed feeding norms meets the needs of the body for energy and the most important nutritive substances, preserves the health of animals, increases their productivity by 10 to 15 percent and improves the utilization of feed.

Considerable work has been done by VIZh and by the network of scientific research institutes coordinated by it on the development of types of feeding and standard rations for farm animals with due regard for their physiological state and the level and direction of productivity, as well as the zonal characteristics of feed production. The types of feeding and rations envisage the maximum utilization of local feed with an optimum expenditure of concentrates and special recommendations for this problem have been prepared.

The significant advances made in working out the problem of a balanced feeding of animals in the last 10 to 15 years have been the theoretical basis for an increase in the full biological value of mixed feed and efficiency of its utilization.

VIZh and the network of scientific institutions coordinated by it took an active part in the improvement in the formulas of mixed feed for various types and groups of animals with due regard for their physiological state and level of productivity. Present mixed feed is balanced according to 30 or 32 indicators. The application of mixed feed balanced in terms of amino acids, vitamins and mineral substances ensures an efficient utilization of grain and other concentrated feed used as raw materials in mixed feed production.

The problem of an efficient utilization of grain in animal husbandry is one of the most urgent. At present VIZh scientists on the basis of a careful balancing of mixed feed in terms of nutritive and biologically active substances have developed mixed feed formulas for the feeding of cows during stable and pasture periods and mixed feed formulas for the fattening and raising of young cattle. The share of grain in them reaches 38 to 50 percent. When mixed feed for the above-mentioned groups of animals is prepared according to the new formulas, the saving of grain per ton of mixed feed will be from 80 to 260 kg.

Under the conditions of an annually increasing shortage of feed of animal origin there is a greater urgency in research connected with the study of the possibility of reducing these components in starter mixed feed for hoglings and in whole-milk substitutes for calves through their replacement with more available protein products and a more careful balancing of mixed feed and whole-milk substitutes in terms of amino acids and biologically active substances.

VIZh developed formulas of starter mixed feed for hoglings of early weaning. The bulk of feed of animal origin was lowered there from 10 to 2 percent. With the same volumes of scarce raw materials the use of these formulas will make it possible to increase the volumes of production of high-grade starter mixed feed fivefold.

Formulas of whole-milk substitutes for calves with a reduced content of dry skimmed milk have been developed. Its consumption per ton of whole-milk substitutes is reduced by 160 to 300 kg.

To increase the nutritive value of mixed feed and to more efficiently utilize the grain forming part of it, various methods of a preliminary moisture-heat treatment of grain have been applied to an ever greater extent in the last few years.

VIZh on hoglings of early weaning (of 26 days) studied the efficiency of four methods of treating barley, that is, roasting, flaking, extrusion and micronization (heating with infrared rays).

It has been established that the treatment of the grain part of mixed feed by any of the indicated methods changes the structure of starch grains, increasing the availability of grain carbohydrates for enzymes of the digestive tract. At the same time, the palatability, edibility and digestibility of feed improve. As a result (depending on the method of treatment), the average daily weight gain in experimental hoglings increases by 12.5 to 34.1 percent as compared with control hoglings and mixed feed expenditures per kg of gain decrease by 4.5 to 12.2 percent.

The establishment of enterprises for the production of enriching mixtures--premixes--in the country is one of the most important factors in an increase in the efficiency of feed utilization.

In connection with this the development of new formulas of premixes meeting modern requirements has been an urgent direction in zootechnical science. As a result of the research performed by VIZh scientists, formulas of premixes for cattle and hogs have been developed and recommended for introduction. Their use makes it possible to significantly increase the full biological value of mixed feed and rations and on this basis to improve the productivity and indicators of reproduction of dairy cattle, to augment weight gains in growing and fattened animals and to more rationally and efficiently utilize feed and biologically active substances.

For example, the use of the developed vitamin-mineral premix in the feeding of cows (vitamins A, D and E and cobalt, zinc, copper, iodine and manganese trace elements) contributes to an increase of 7 to 18 percent in dairy productivity and to an improvement in the reproductive function in animals (service period is shortened to 45 or 70 days). At the same time, the vitamin value of colostrum and milk, the preservation of calves and their resistance to gastrointestinal diseases increase and metabolism in highly productive cows is normalized. The use of a vitamin-mineral premix in mixed feed for sows makes it possible to additionally obtain about 500 hoglings per 1,000 sows. The enrichment of mixed feed with a vitamin-mineral-antibiotic premix for fattened hogs increases the efficiency of its utilization and makes it possible to save about 25 tons of mixed feed per 1,000 head of fattened hogs.

Formulas of premixes and of a vitamin-mineral additive for the fattening of young cattle with malt residues have been developed. Their use in the composition of mixed feed ensures average daily weight gains of 990 to 1,018 grams with an expenditure of 8 to 8.5 feed units, including 3 to 3.1 kg of concentrated feed, per kg of weight gain.

In connection with the development of new formulas of mixed feed, protein-vitamin additives and premixes there is a need to search for and study new feed products and additives, preparations of biologically active substances, macro- and micro-elements and vitamins.

VIZh has also done significant work in this direction. The institute's associates have developed recommendations for the use of feed antibiotics, synthetic amino-acids, mineral additives and vitamin preparations. They are widely introduced into the practice of animal feeding and bring a perceptible effect in the increase in the production of livestock products. For example, the use of feed antibiotics alone ensures the derivation of more than 500 million rubles of profit annually.

A more efficient utilization of antibiotics as feed additives for farm animals is possible with an extensive assortment of these preparations. Bacitracin and feed grisein are now used in our country. The extensive selection of feed antibiotics makes it possible to organize their more efficient alternate use. For example, grisein or tylosin (fradicin) is used in the raising of hoglings and bacitracin or flavomycin, in their fattening, which greatly increases the efficiency of antibiotic use.

For example, when the sizes of hoglings are increased, the hoglings that have received grisein give an average daily gain 8 percent higher than the control and, at the same time, feed consumption per kg of gain is 8 percent lower. An addition of grisein to the ration of fattening animals, which received it for an increase in their sizes, made it possible to obtain an average daily gain 1 percent higher than that in control animals with a smaller feed consumption (by 6.5 percent). The replacement of grisein with bacitracin during the fattening period contributed to an increase of 8 percent in average daily gains and to a decrease of 9.9 percent in feed consumption.

In the future for the organization of an alternate use of antibiotics in animal husbandry it is necessary to set up the output of flavomycin, fradicin and spiramycin.

During the current five-year plan VIZh jointly with other scientific institutions approved a new source of beta-carotene of microbiological synthesis. It has been established that carotene plays a specific role in the reproduction function. Vitamin A cannot replace it. For example, feeding carotene of microbiological synthesis to noncalving young cows, primapara heifers and dry and newly calved cows had a greater effect, as compared with vitamin A, on the reproductive function, milk productivity, fat content of milk and content of vitamin A and carotene in the colostrum and serum of the blood of cows.

Feeding microbiological carotene to cows 1 or 2 months before calving and during 2 months after it in the dose of 100 to 120 mg per head in 24 hours increases milk productivity by 10 to 12 percent and shortens the service period by 19 to 21 days as compared with animals receiving vitamin A.

Industrial output of beta-carotene by the method of microbiological synthesis is now carried out in our country. However, the volume of production of this preparation is insufficient for meeting the need of animal husbandry.

In connection with the further intensification of animal husbandry and the tasks concerning an increase in the production of livestock products there is a need to intensify the research on working out the most urgent problems of feeding farm animals. The efforts of scientists must be concentrated on an improvement in the theory of normed feeding and increase in the efficiency of feed use ensuring the realization of the genetic potential of the productivity of animals under conditions of concentration and specialization of animal husbandry; development and improvement of feeding norms and rations for highly productive animals; development of more efficient, new rations, mixed feed, protein-vitamin additives and premixes ensuring a balance of the rations of various types and groups of animals in accordance with detailed norms and a decrease in the consumption of concentrates; increase in the use of the nutritive substances of rations throughout the country's zones; search for new energy, protein, mineral and vitamin sources of feed; study of the role and importance of biologically active substances in the feeding of animals and poultry and their interaction (antagonism and synergism) in the composition of rations, mixed feed and premixes; further study of the composition and nutritive value of feed for various types of animals throughout the country's zones; improvement in the technology and technique of feeding farm animals as applied to intensive management of animal husbandry.

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CSO: 1824/67

LIVESTOCK FEED PROCUREMENT

CSA MIXED SILAGE HARVEST REVIEW

Moscow SEL'SKAYA ZHIZN' in Russian 28 Sep 84 p. 2

Article by M. Glinka, zootechnician: "Preparation of Mixed Silage In All Areas"/

Text As reported by the USSR CSA, the following product amounts had been accepted at farms throughout the country by 24 September: 64.4 million tons of hay, 65.8 million tons of haylage, 76.4 million tons of straw, chaff and other coarse feeds and 4.7 million tons of food roots and melon crops. Roughly 6.5 million tons of artificially dehydrated green feed were produced and 178 million tons of prepared silage obtained.

One of the chief concerns of the feed procurement specialists at the present time is that of laying in silage. During the week under review, the supplies of this feed increased by 31.4 million tons and amounted to 68 percent of the planned amount as of 24 September. In evaluating this figure, it should be borne in mind that succulent feed is taken into account only after a considerable period of time has elapsed following its being placed in storage. Thus the actual amount already laid away exceeds noticeably the figure in the report. For example, 114.9 million tons of prepared silage were obtained at kolkhozes, sovkhozes, inter-farm agricultural enterprises and other state farms in the Russian Federation against a plan calling for 149.8 million tons. The task was thus fulfilled by 76.7 percent. And 202.7 million tons of silage bulk were placed in storage -- in excess of 9 million more tons than by this same period last year. A number of oblasts throughout the republic have already fulfilled their plans for obtaining prepared silage. This includes Orel, Gorkiy, Belgorod, Lipetsk, Penza and Sakhalin oblasts. The farms in the Altay Kray, the Mordovian Autonomous Republic and in Vologda, Ryazan, Kirov, Tambov, Ulyanovsk, Perm and Sverdlov oblast, where more than nine tenths of the planned amount of succulent feed have been obtained, are close to fulfilling their tasks. The procurements of succulent feed for the union republics are furnished in the table on the following page (prepared silage obtained in percentages of the plan).

Silage has always been the principal succulent feed for cattle. Recently, on many farms, it has entered into more widespread use in the rations for hogs. Obviously, we are not speaking here about the usual type of silage but rather a special mixed silage prepared for this purpose.

RSFSR	77
Ukraine	60
Belorussia	79
Uzbekistan	42
Kazakhstan	45
Georgia	35
Azerbaijan	42
Lithuania	88
Moldavia	33
Latvia	74
Kirghizia	68
Tajikistan	49
Armenia	50
Turkmenia	64
Estonia	108

But we do not wish to start a discussion today on the type of feeding for hogs. One of the founders of Soviet zootechnics, Professor Ye.A. Bogdanov, wrote that the use of root crops in hog raising, especially sugar beets, is more advantageous than grain. In experiments which he conducted on the fattening of hogs using succulent feeds, an average daily weight increase of 636 grams was obtained -- a fine result for that period of time. And at the suburban Moscow Gorki Leninskiye Farm, 5-8 month old gilts which had been fed a ration of 6-6.5 kilograms of sugar beets, increased in weight at the rate of 650-700 grams daily while consuming only 4.5 feed units per kilogram of weight increase.

But taken individually, not one of these feeds possesses all of the properties which we require -- some have many carbohydrates but very little protein, others are rich in protein but poor in sugars and still a third group lacks vitamins. A mixture of these feeds is still another matter. Here we can select a structure which will allow us to obtain feed for any specific group of animals -- nursing or pregnant sows, young stock which are maturing or on fattening regimes. And best of all, such a mixture need not be prepared immediately prior to being issued to the animals but rather it can be placed in advance in silage trenches. In the process, many advantages are realized: raw materials are used for this feed which in another form would be unsuitable for use on a hog farm, the labor and resource expenditures required for preparing a feed mixture prior to its being fed to the animals are eliminated, the nutrients are better preserved and most important -- the inclusion of mixed silage in the ration makes it possible to realize a considerable savings in the use of concentrates.

The mixed silage includes such crops as fodder beans, vetch, peas, soybeans, corn, clover, alfalfa, field kale, sugar beet haulm, various root vegetables, the fruit of melon crops, hay meal, the chaff of pulse crops and the seed plants of perennial grasses. Moreover, they are selected in a manner such that the moisture content of the prepared feed is roughly 70-75 percent -- a mixture of such consistency is best consumed by the hogs. All of the components of the silage are minced into a pulp and thereafter they are mixed and placed in a storehouse having moisture proof walls. The root crops are washed in advance and the potatoes steamed.

The effectiveness of this feed is high. For example, at the Dubrovitsy Experimental Farm of the All-Union Institute of Animal Husbandry, gilts of the

large white strain added weight at the rate of 617-627 grams daily when fed rations containing 34 to 49 percent mixed silage (in terms of food value). In this instance the silage consisted of 70-90 percent potatoes and 30 percent green alfalfa or 10 percent hay alfalfa meal.

This data is more than 20 years old -- unfortunately, in recent years succulent feed has been overlooked on the hog farms and some zootechnicians possess only a weak knowledge of mixed silage. Last year, for example, it occupied only 0.3 percent of the ration for hogs in the Maritime Kray. Mixed silage constituted less than 1 percent of the prepared ration in Krasnoyarsk Kray and in Vologda, Leningrad, Moscow, Omsk, Chelyabinsk and Irkutsk oblasts.

This year the situation is being corrected in a number of areas. Considerable increases have taken place in the supplies of preserved succulent feed for hogs in Krasnodar Kray, in the Mari, Tatar, Bashkir autonomous republics and in Pskov, Kursk, Lipetsk, Kuybyshev, Rostov, Orenburg, Omsk, Irkutsk and Chita oblasts. In the Mordovian ASSR, more than 109,000 tons of mixed silage have already been laid away -- more than 5 tons per sow. On hog raising farms in the Kalmyk ASSR and in Vladimir, Tambov oblasts -- 4.7-5.6 tons per sow and in Voronezh Oblast -- 2.9 tons per sow. But in some areas they still consider the grain fields to be the only source of nourishment for hogs. How else can one explain the fact that in the Karelian Autonomous Republic only 70 kilograms of mixed silage per sow were laid away, in Krasnoyarsk Kray -- 520 kilograms, Novgorod Oblast -- 870, Kalinin Oblast -- 750, Tula Oblast -- 840, Kirov Oblast -- 610, Kemerovo -- 740 and Gorkiy Oblast -- 450 kilograms per sow. And in Kostroma Oblast there are only 390 kilograms of succulent feed per sow.

An increase in the proportion of succulent feed in the forage funds of hog raising farms is not a short-term campaign brought on by this year's conditions, but rather it is a long-term program for further developing the branch. The implementation of this program requires the creation of an appropriate logistical base: the construction of special trenches, proper re-equipping of the feed preparation shops and an increase in the production of machines for the washing, mincing and mixing of components, steaming of potatoes and the issuing of damp feed mixtures. Here there is food for thought not only for the agricultural workers but also for workers attached to the Ministry of Machine Building for Animal Husbandry and Fodder Production.

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CSO: 1824/038

LIVESTOCK

PROBLEMS INDICATED IN VOLGA REGION LIVESTOCK REVIEW

Saratov STEPNNYE PROSTORY in Russian No 7, Jul 84 pp 2-5

[Article by V. F. Davydov, deputy director of the Main Production Administration, Transvolga Economic Region, of the RSFSR Ministry of Agriculture: "Intensively Developing Livestock Raising"]

[Text] In implementing the decisions of the May 1982 and June and December 1983 plenums of the CPSU Central Committee, farm workers of the Transvolga took a new step in increasing the production and procurement of livestock products. The annual plan for milk procurement in 1983 in the zone as a whole was fulfilled by 107 percent; for livestock and poultry procurement--by 101 percent; for egg procurement--by 108 percent; and for wool procurement--by 103 percent. Village workers are eliminating lags that were tolerated as a result of the extremely difficult weather conditions of preceding years. Last year significantly more quality hay, haylage, straw and root crops were procured. For public livestock raising 15.6 quintals of feed units were allocated per standard head for the current overwintering period as compared to 13.5 during the last. Feed supplies of all types, including concentrated, comprised 85 percent. The basic mass of concentrated feeds was utilized in prepared form. Some of it was earmarked for the production of mixed feeds and feed mixtures, as well as granules and briquettes. Coarse feeds contained yeast and malt. In kolkhozes and sovkhozes there were 6,700 feed shops and feed kitchens.

There has been a slight improvement in the availability of livestock facilities for animals.

Progressive forms of organizing and reimbursing labor are being introduced. At the present time, 430 farms having 255,900 head of cattle have been transferred to the flow-shop system of milk production. Two-shift and two-cycle work for livestock farmers has been introduced on 1,218 dairy farms, or one-third of the number in the rayon.

Collective contracts are also in use. This year they encompass 14,400 livestock farmers in 3,090 enterprises. During the 1983/84 overwintering period kolkhozes and sovkhozes were able not only to preserve but to increase somewhat the number of cattle, sheep and poultry, to acquire more young of all

types of animals and to curtail epizootic disease. In 5 months of overwintering the procurement of livestock and poultry increased by 17 percent, of milk--by 6 percent and of eggs--by 3 percent as compared with the same period during the last overwintering.

If we objectively evaluate branch results for recent years it is essential to note that livestock raising is developing without stability primarily because of the absence of a comprehensive approach to solving urgent problems. In particular, insufficient attention is given to the development of the branch by agricultural organs. The organization of herd reproduction and the use of the maternal herd is unsatisfactory. The necessary measures are not being taken to increase the productivity of all types of livestock or to organize breeding operations. In a number of places unfavorable epizootic conditions have developed. The feed base is weak. Serious shortcomings exist in training and improving the skills of workers in livestock farming.

In recent years in a number of enterprises and oblasts there have been instances of sharp drops in the productivity of cows. One of the reasons for this is the insufficient work to raise highly productive calves and the absence of a scientific basis for introducing them into the main herd. Thus, in 1983 in the region as a whole 21 primapara heifers were introduced into the herd per every 100 cows, as compared with 20 in 1982. This work was carried out successfully in Volgograd, Kuybyshev and Ulyanovsk oblasts. The enterprises of Saratov Oblast worked below not only the zootechnical norm but last year's levels as well.

As before, the renewal of the herd is proceeding extremely slowly in the enterprises of the Tatar ASSR--at a rate of only 17 percent.

In Astrakhan Oblast the proportion of calves over 1 year of age that are sold for beef equals 31 percent, in Saratov Oblast--33 percent, and in Penza Oblast and the Tatar ASSR--50 percent. In Astrakhan, Volgograd, Saratov and Ulyanov oblasts each year 25-44 percent of calves over 2 years of age remain un-inseminated. The unsatisfactory replacement of the herd has led to the fact that the number of cows which have calved seven times and more equals almost 13 percent in the Transvolga, 18 percent in Penza, Saratov and Ulyanov oblasts and 21 percent in the Tatar ASSR. This herd age structure is one of the reasons why in the region as a whole over 40 percent of cows have a productivity below 2,000 kilograms of milk; over 550,000 cows, or 20 percent of those present at the beginning of the year, do not produce progeny each year.

The inadequate introduction of primapara heifers results in the forced upkeep of low-productivity, sick and old animals. All of this results in a deterioration of economic indicators in dairy farming, increases expenditures of feed and labor, decreases the output of calves and increases production costs. Work involved in organizing specialized farms, brigades and divisions to raise calves in a number that will achieve the replacement needs of the basic herd must become one of the most important within the system of zootechnical measures.

As of 1 January 1984 in the region there were 103 specialized enterprises for raising heifers and primapara heifers. In the course of a year they sold 86,100 heifers and primapara heifers, which is 11,900 more than in 1982. However, specialized enterprises raise only one out of six heifers that are necessary for herd replacement. In this area, not all specialized enterprises are working satisfactorily. Can we consider it normal that in Parus Sovkhoz, Belinskiy Rayon, Penza Oblast, which specialized in raising heifers, the average daily weight gain of heifers is 215 grams, whereas in Yubileynyy Kolkhoz of Neverkinskiy Rayon it is 247 grams? In Sovetskiy Sovkhoz of Balashovskiy Rayon, Saratov Oblast, of 6,000 livestock places for raising heifers only 2,900 are filled; in Put' K Kommunizmu Kolkhoz of Bazarno-Karabulakskiy Rayon only 1,105 of 3,000 livestock places are being utilized. As a result the average sales price of one calf is 2-3 times higher in some specialized enterprises than in non-specialized enterprises.

Within the system of agricultural management a basic place belongs to work on herd reproduction. The existing situation here cannot be considered satisfactory. Whereas in 1983, which was favorable in terms of weather conditions, an average of 80 calves were produced per 100 cows, or 2 head more than in 1982, in Astrakhan, Penza and Volgograd oblasts the output of calves decreased. This was the result of a decrease in the general level of effectiveness of the entire complex of zooveterinary measures to prevent sterility and barrenness in the mother herd and of a deterioration in the work of zooveterinary specialists. The reasons for lack of productivity and barrenness in the mother herd are not discovered in a timely manner and effective preventative measures are not taken. As a result, a large number of animals is not inseminated at the optimal time.

Serious shortcomings in the use of the maternal herd are tolerated in the enterprises of Saratov Oblast, where as of 1 February 1984 36 percent of cows were not inseminated.

The work of the veterinary service in organizing treatment and preventative measures for the postpartum period is poor, which results in massive endometritis and other illnesses.

In recent years highly productive foreign cattle has been used widely. This facilitates the accelerated development of a breeding base in livestock raising, allows us to organize breeding-pedigree work to develop highly productive types, plant lines and families and permits us to develop a valuable herd of sires in the Transvolga region.

However, in some enterprises the necessary feeding and maintenance conditions have not been created for imported livestock, which was the basis for the unsatisfactory use of its potential possibilities in regard to reproduction. Thus, in the Krasnoye Znamya State Breeding Plant of Penza Oblast mature cows of the Black Spotted breed produced 3,421 kilograms of milk each in 1983; in other words the animals' genotype was realized by less than 60 percent.

Violations of feeding and upkeep conditions for livestock has a negative effect on the reproduction of the herd. In particular, there has been a sharp

decrease in the feeding of hay, and the proportion of concentrated feeds has increased. Whereas in 1965 concentrates comprised 26 percent of rations, now their proportion has increased to 40 percent, and in Penza and Kuybyshev oblasts--to 45 percent. There are cases in which concentrated feeds make up 50 percent of a cow's rations, which has a negative effect on the reproductive functions of animals and results in intrauterine deaths of progeny and in the birth of non-viable young.

At the same time, the region's enterprises do not fully value the possibilities for raising crops that are rich in protein. Thus, in Volgograd Oblast the acreage in peas decreased by a factor of 2.8 from 190,000 hectares in 1964. In the Tatar ASSR this year there were also unjustified attempts to decrease the area in peas.

Even though faced with a shortage of feed rich in sugars and carotene, the zone's enterprises are not making use of favorable natural-climatic conditions for cultivating feed root crops and melon crops although only the optimal quantity of sugar in the ration will provide the conditions for the effective assimilation of protein.

It is very important to improve the quality of livestock products. In 1983 the proportion of first quality milk submitted increased by less than 4 percent. The delivery of first-quality milk was curtailed in the Tatar ASSR, and in the enterprises of Astrakhan Oblast and the Kalmyk ASSR 48 and 39 percent respectively of the milk that is delivered is first quality.

In 1983 the actual fat content of milk continued to remain below base level; as a result losses in the zone as a whole comprised 80,200 tons or 2.2 percent of what was accepted in its natural form, and in Saratov and Penza oblasts--4.3 and 4.9 percent of total deliveries respectively. This is the result of violations in the feeding of animals and of serious shortcomings in controls over the sale of products.

During the period of summer pasture maintenance it is essential not to weaken controls over producing high-quality milk. This is possible if the condition of farms and summer camps meets sanitary-hygienic requirements, if cooling equipment is constantly in working order and if camps and farms are supplied with the essential washing, disinfecting and filtering materials.

In the region's oblasts and ASSR's there are 115 dairy complexes, 34 hog-raising complexes, 22 complexes for raising and fattening cattle, 23 sheep-raising complexes and 103 complexes and specialized enterprises for the purposeful raising of heifers.

In 1983 279,700 tons of milk were produced in dairy complexes. On the average each cow in the complex produces 260 kilograms of milk more than the average for cows in kolkhozes and sovkhozes.

Good and stable indicators are achieved each year by the dairy complexes of Yelanskiy Sovkhoz of Penza Oblast, Rubezhnoye and Progress sovkhozes of Kuybyshev Oblast, Volgo-Don Sovkhoz of Volgograd Oblast and a number of others.

Nevertheless, there are many shortcomings in the work of livestock-raising complexes. Today of the available 115,700 livestock places available in dairy complexes 106,400, or 92 percent, are filled. Of the five dairy complexes in Astrakhan Oblast not one has worked up to planned capacity, and the average milk yield per cow was 115 kilograms lower than the oblast average. Complexes are utilized unsatisfactorily in Saratov and Ulyanovsk oblasts. In six out of 15 dairy complexes in Saratov Oblast the annual milk yield per cow is less than 2,000 kilograms. Extremely low milk yields per cow are being achieved by Complex imeni Lenin of Yershovskiy Rayon, 40 Let Oktyabrya Complex of Sovetskiy Rayon and Volgar' Complex of Balakovskiy Rayon.

In the Kalmyk ASSR there is one dairy complex for 800 cows in Strana Sovetov Sovkhoz, but even it is still only half filled to capacity. Last year 100 cows here produced only 70 calves and the cost of 1 quintal of milk equalled over 40 rubles.

A large amount of attention at the May 1982 and February 1984 plenums of the CPSU Central Committee was focused on increasing labor productivity and on improving work quality, on economizing, on eliminating losses and on decreasing the cost of production in kolkhozes and sovkhozes.

In dairy farming these requirements are fulfilled most clearly with the introduction of a flow-shop system of milk production. When using it, basic production processes take place in specialized shops, which provides the opportunity to more fully realize the genetic potential of animals, to conduct more thorough breeding-pedigree work, and to organize the reproduction of the herd. On the basis of the further division of labor there should be a determination of the functions of livestock farmers, an organization of their work day, an improvement in production quality and an increase in the role and responsibility of specialists.

As the experience of leading enterprises has shown, new technology enables enterprises to increase milk production by 15-20 percent in a short period of time.

At the present time the new technology is being used in the region by 331 enterprises, including 92 dairy complexes, where 257,000 cows are maintained. The average milk yield per cow increased by 104 kilograms here this year, which is 9.3 percent higher than the average Transvolga level.

At the same time, the flow-shop system of milk production and herd reproduction is being introduced slowly, and in the enterprises of Penza, Ulyanovsk and Volgograd oblasts the situation is simply unsatisfactory. The new technology for milk production there encompasses fewer than 10 percent of farms with a herd of 400 cows and more.

With the goal of improving breeding as one of the most important factors in intensifying livestock raising, within a relatively short period of time several resolutions were passed by the party and government which are directed at the development of an extensive network of breeding plants and sovkhozes, at strengthening their material-technical base and at carrying out more thorough

breeding-pedigree work in livestock raising. Nevertheless, in Saratov and Astrakhan oblasts and the Kalmyk ASSR there is not a single breeding plant or sovkhoz involved in reproducing dairy breeds of cattle. The same situation exists in Volgograd and Ul'yanovsk oblasts, where there are only 1-2 breeding enterprises. It is no accident that the proportion of pure-breed cows within the structure of the herd equals only 5-8 percent.

In some breeding enterprises the productivity of animals does not exceed the level found on regular commercial dairy farms. This type of situation can be seen in Breeding Sovkhoz imeni Stepan Razin of Kuybyshev Oblast, in Berezovskiy Breeding Sovkhoz of Ulyanovsk Oblast and in Smychka and Altayskiy breeding sovkhozes of Saratov Oblast.

The Transvolga Economic Region is a large pork producer. Seventeen percent of the total number of hogs in the RSFSR are concentrated here. In recent years the development of hog raising in the Transvolga has been characterized by further production specialization and concentration and by the transition of the branch to an industrial base by means of the building of large state hog-raising complexes as well as of the renovation and expansion of existing farms. At the present time 34 large complexes are in operation in the region, including three for raising and fattening 108,000 hogs annually, four for 54,000 hogs, 20 for 24,000 hogs and seven for 12,000 hogs. A high level of such pork production has been achieved in Kuybyshev and Penza oblasts, where 45-80 percent of gross pork production comes from specialized farms and complexes. In operating them, optimal maintenance and feeding conditions have been created for the herd based on the modern level of knowledge about the biology of hogs. Thanks to the growth of productivity in animals and to a better organization of production, there is a sharp increase in labor productivity and a decrease in production costs. Thus, Alekseyevskiy Sovkhoz of Kuybyshev Oblast annually produces over 110,000 piglets and sells the state 12,000 tons of pork. Three man-hours and 5 feed units are expended per 1 quintal of product, which is significantly less than the oblast average.

In coming years a significant portion of products will be supplied by the existing farms on kolkhozes and sovkhozes. On the basis of enlarging facilities, equipping them with modern equipment and introducing the elements of industrial technology it will be possible to increase the volume of production output in a short period of time and to decrease the expenditure of labor and resources for production. On the average for the zone, for every 100 basic sows available at the beginning of the year, 1,229 piglets were produced, which is 16 percent above last year's levels; losses have decreased. Nevertheless, the proportion of pork within total meat procurement remains low. Last year it comprised only 26 percent.

Average daily weight gain also remains low. Thus, in Penza and Volgograd oblasts it decreased from 2.1 to 16.3 percent as compared with last year and does not exceed 330 grams. For this reason, the average weight of hogs taken off the fattening regimen equals only 92 kilograms in the region as a whole, and in Saratov and Volgograd oblasts--only 84 kilograms. Of the 293,700 tons of pork delivered to the state, only 154 tons belonged to the first category and 23,500 tons were non-standard. The fattening of hogs is organized

especially poorly in the enterprises of Saratov and Penza oblasts, where 10-11 percent of total deliveries consist of non-standard pork.

An increase in the average delivery weight of hogs to 120-130 kilograms will enable farmers to additionally produce over 50,000 tons of pork.

It should be noted that with a feed shortage there is a tendency to increase expenditures for the production of 1 quintal of pork; the expenditure of concentrated feeds also increases. Whereas in 1975 8.9 quintals of feed units were expended per quintal of production, including 8 quintals of feed units of concentrates, in 1982 the corresponding figures were 10 and 8.9 quintals of feed units. In this way, within the structure of rations the expenditure of concentrates equals 89 percent; in other words, succulent feeds are practically absent.

In Volgograd Oblast last year only 2.4 tons of mixed silage was stored per sow, in Ulyanovsk and Saratov oblasts—3.1-3.3 tons, whereas in Kuybyshev Oblast the figure reached 9.5 tons, thereby enabling farmers there to achieve a 15-18 percent savings in concentrates.

As we can see, one of the main reasons that hog raising is being held back is the absence of a dependable and balanced feed base. Efforts have not been focused on solving the problem of feed protein, especially by means of expanding crop area and of significantly increasing the production of peas, alfalfa, lupine, soybeans and other high-protein crops.

In the Tatar ASSR the density of hogs per 100 hectares of plowland equals 25.8 head, in Ulyanovsk Oblast—24.7 head, and in Volgograd and Saratov oblasts—17.6 and 13.7 head respectively. The differences are considerable.

Necessary attention is not paid to the development of hog raising in the private sector. Despite some increase in the sale of piglets to the population, demand remains unfulfilled every year. The situation is especially bad in Volgograd Oblast and the Tatar ASSR. Here even in 1983, a favorable year, significantly fewer piglets were sold as compared with the preceding year.

The Transvolga Economic Region has at its disposal favorable natural-climatic conditions for the development of sheep raising as well. This is why it is no accident that one-fourth of wool production in the RSFSR is concentrated here. A considerable portion of the total volume of livestock products sold is made up of wool and lamb. Over 70 percent of the wool that is sold comes from Merino sheep.

At the same time, in the enterprises of Penza, Kuybyshev and Ulyanovsk oblasts and the Tatar ASSR the production of wool has practically not increased, and now equals 2.8-3.3 kilograms. Some enterprises continue to brand sheep and to mark sheep with indelible dyes. As a result, they carry great losses from the sale of defective wools. The situation is no better with regard to the production of lamb, especially in Penza and Ulyanovsk oblasts.

The transition of sheep raising to an industrial basis is proceeding at a slow pace. In the Transvolga region at the present time there are only 20

complexly-mechanized sheep-raising farms in operation, and their work can in no way be deemed satisfactory.

Few material-technical resources are allocated for the development of sheep raising and the base for the stable development of the branch is being created at a slow pace. In Astrakhan Oblast sheep-raising enterprises are supplied by only one-third with model facilities and their building is practically not being carried out. The enterprises of Volgograd and Saratov oblasts are experiencing a special shortage of winter shelters. This is why the loss of lambs hardly decreases, and in the Kalmyk ASSR it has even increased.

Each year over half the sheep that are delivered to the state are either below average in nutritive state or emaciated.

A large quantity of sheep is still slaughtered within enterprises.

Now sheep farmers must focus most of their attention on strengthening the branch's material-technical base and on facilitating its transition to an industrial production orientation.

In recent years sheep sovkhozes have practically ceased the sale of pedigree young. As a result, instead of exporting sheep they import 80,000-100,000 pedigree sheep annually.

At the present time livestock farmers have no more important task than to successfully carry out the summer pasture season and to produce the largest quantity of products.

During this period all categories of enterprises in the Transvolga region must sell the state 2,548,000 tons of milk, which comprises 62 percent of annual procurement, and 524,000 tons of meat, which are 104,000 tons and 17,000 tons more than for the same period last year.

In connection with this, the organization of summer pasture maintenance of livestock requires great attention, keenness of observation and more well-grounded calculations than with winter feeding.

Moreover, farmers often wait for the pasture season with impatience in order to get rid of the responsibility for livestock and to leave the animals to themselves. As a result, the productivity of cows increases only at the beginning of the pasturing period, and then noticeably declines. The correct organization of summer feeding of cows requires careful preparation and precise economic calculations. Since green feeds are most biologically full-value for animals, the main task of enterprises' directors and specialists is to maximally satisfy the needs of cows with regard to nutritive substances according to scientifically-based norms and using green feeds. During the summer period the need for green feeds must be accounted for from early spring to late fall, as must their sources--natural feed lands, irrigated haylands and pastures and specially-cultivated feed crops. Every enterprise must have a scheme for the "green conveyor," which foresees the delivery of green feeds by months and by 10-day periods in the summer.

Calculations show that for every 100 cows an acreage of 50 hectares of feed crops, or 0.5 hectares per cow, is needed.

An important place in the "green conveyor" scheme belongs to irrigated perennial grasses utilized no fewer than three times during the summer. In order to make up for the shortage of green feed in late summer and fall it is necessary to include corn and feed root crops in the scheme.

Because of the variability in soil-climatic conditions and in the material-technical bases of enterprises, in our zone the summer maintenance of cows must be carried out by combining rotational-portioned grazing on cultivated pastures with supplementary feeding of green feed in stalls. This secures greater productivity in cows and improves the natural resistance and health status of animals. The basic indicator of nutritive value of rations that consist of green feeds is their content of dry substance. A cow utilizes the necessary quantity when dry substance is of the greatest nutritive value--in legumes this occurs during the budding phase and in spike crops during the ear-formation phase. For the productivity of cows the vegetative phase of the plants being eaten is more important than their botanical composition. It has been established that with pasture maintenance the decrease in milk production is directly related to the aging of grasses in enclosures. This cannot be tolerated, especially at the beginning of the summer period, when grass grows intensively and when livestock does not have time to utilize it during its optimal phase of development. The green mass should be mowed for use as hay, haylage or grass meal or stored as early silage, to be fed during rainy weather or when there is a shortage of green feeds.

However, not a single crop can fully satisfy cow's needs for nutritive and biologically-active substances. Thus, legumes more than meet the needs of cows for digestible protein, but do not contain enough carbohydrates and especially sugar. All green feeds are poor in sodium and contain more than enough potassium. For this reason it is especially important to provide cows with salt during the summer period.

Under conditions of intensifying feed production by means of utilizing large doses of mineral fertilizers, the chemical composition of plants often changes in an undesirable direction, which also results in a drop in productivity and in the reproductive functions of cows. Consequently, in every agricultural soil zone there must be preventative norms for supplementary feeding of salts of microelements.

As we can see, for full-value rations of dairy cows during the summer period not only the carrying out of an entire series of organizational-technical measures, but a knowledgeable approach to the efficient use of green feeds as well are required.

Only a careful consideration of all factors will help livestock farmers of the Transvolga region to successfully deal with intensive state plans and to fulfill not only this year's quotas but also those of the final year of the 11th Five-Year Plan with honor.

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CSO: 1824/671

LIVESTOCK

KAZAKH STOCKRAISING UNITS, FEED BASE CRITICIZED

Moscow PRAVDA in Russian 3 Oct 84 p 2

Article by A. Petrushov, Kazakh SSR: "Meat Department of Kazakhstan"

Text Kazakhstan is known not only for its fine wheat, rice and snow-white cotton. Another strong agricultural branch -- beef cattle husbandry -- is developing in the adjacent fields. For this present five-year plan, the plans here call for the average annual production of livestock and poultry in dressed weight to be raised to 1.2-1.3 million tons. This is a labor-intensive task. It will require a great amount of effort and resources.

Beef accounts for almost one half of the overall volume of procurements of these products. The cattle herd numbers millions of heads. Many kolkhozes and sovkhozes are following the path of branch intensification. For example, there is the beef conveyer line at the Sovkhoz imeni Gazeta Pravda in Uralsk Oblast. This farm annually ships several thousand young bulls to a combine. Each weighs approximately 500 kilograms.

The work has been organized well at the Kustanay Moskalevskiy Sovkhoz. Recently the beef yield here has increased by a factor of more than five. And this year the annual plan for meat production will be exceeded successfully.

There are also other collectives which have organized fine fattening operations. But are there many such collectives? The republic's Ministry of Agriculture has cited approximately 90 rayons in which the average delivery weight for the animals has reached or exceeded 350 kilograms. And what about the remaining ones? Indeed, 2,370 farms and 217 rayons are engaged in cattle husbandry operations. For some it is a problem to fatten a young bull to even as much as 300 kilograms.

Recently the party and state have undertaken measures aimed at economically stimulating animal husbandry operations. The purchase prices have been raised and bonuses have been introduced for adding on to these prices in behalf of weak farms. Nevertheless, the advances in farm operations have still been negligible. Moreover, some farms have even taken a backward step. For example, a decrease has been noted this year in the weight of animals removed from fattening.

Some leaders and specialists are wont to claim that the climate let them down.

It is true that the weather conditions cannot be overlooked. But the leading collectives do not complain about the weather. For example, since the beginning of the five-year plan the farms in Pavlodar Oblast have sold 2,500 tons of meat over and above the plan.

Inter-farm complexes for the maturing and fattening of livestock have been created in Kazakhstan. During the 10th Five-Year Plan, 349,000 tons of meat were obtained here merely as a result of having raised the weight increases. This is a fine reserve. But how is it to be used, for example, by specialized farms in Kzyl-Orda, Dzhambul and some other oblasts? The daily weight increases in cattle here are only 200-300 grams. Unstable production operations and low production profitability at some spetskhozes /specialized farms/ have disrupted the faith that shareholder farms have had in these spetskhozes up until this time.

The workers at some complexes refer to a weak logistical base. And there is some basis for this. Within 2 years, it is expected that the complexes will be fattening more than 1 million head of young stock -- more by a factor of three than the number now being fattened and many of these complexes are poorly prepared for this from a technical standpoint. The miscalculations could result in serious economic costs.

As yet, the plan for beef purchases rests mainly on the "shoulders" of the conventional farms. But even here full use is not being made of the available opportunities. Quite often animals of a low nutritional value are being sent to the combines. In 1982, 675,000 head of cattle turned over by the farms were classified as being of low weight -- almost one third of the number of cattle sold. In particular, the products delivered by kolkhozes and sovkhozes in Guryev, Chimkent and Karaganda oblasts were of very poor quality.

And what about reproduction of the herd? Last year, only 69 calves were obtained per 100 cows. And this year the increase is not very great. Obviously, this is not the case in all areas. There are many farms which are obtaining a calf from each cow. But the useful experience is not being disseminated. Over a period of 3 years, the rate of increase in the animals was 0.4 percent. The quality of the products is suffering and production costs are rising. The task has been assigned of increasing the beef herd and improving its strain structure. Within the republic, the plans call for the creation of 57 breeding farms and yet only four have appeared over the past 5 years.

The path to be followed for improving the economies of beef farms is well known: cost accounting. Brigade Leader A. Aleksandrov of the Krasnoznamensk Fattening Association in Tselinograd Oblast, after converting over to the contract method, succeeded in raising almost 1,500 young bulls last year. The expenses for labor and resources decreased sharply. Today the collective contract method has been mastered throughout the republic by approximately 5,000 livestock husbandry brigades and teams. But this is only 6.6 percent of all those working in the branch.

Many reserves are available in sheep raising. Considerable resources have been allocated in recent years for its development and this certainly will have an

effect on the results achieved. High indicators have been achieved by dozens of kolkhozes and sovkhozes and by hundreds of shepherds' brigades. But by no means by all of them. The proportion of mutton compared to the overall volume of meat procurements barely exceeds 25 percent. The sheep are being sent to the combines in a low weight condition.

The plans call for the number of sheep and goats in the republic to be increased. However, many of the actions required to accomplish this goal have still not been carried out. And instead of the planned growth, there has actually been a reduction in some areas. On the whole -- by hundreds of thousands of heads.

The republic supplies a considerable amount of pork. Pork production on an industrial basis is especially profitable. For example, over a period of 10 years the Ust-Kamenogorsk Complex doubled its meat deliveries. Eight such enterprises are producing one third of all of the pork. Three more complexes will soon enter operations. Yes and the older plants are being restored to proper order and undergoing modernization. But the specialists believe quite properly that full use is still not being made of the opportunities which are available for developing this "early maturing" branch.

Horse breeding and camel breeding furnish high calorie food products. The scientists believe that the number of horses should be increased in the semi-desert, desert and mountainous zones.

"A chief factor restraining the development of meat animal husbandry" stated the deputy chairman of the Kazakh SSR T. Kuppayev, "is the weak forage base. At first glance, it would seem that we have adequate forage lands. The specialists are not being held back in their desire to raise the productivity of these lands. And yet the work is proceeding only slowly."

Pasture land occupies a tremendous amount of space in Kazakhstan. Moreover, there are 10 million hectares of arable land, including irrigated land, being used for forage crops. Nevertheless, the farm requirements for feed are still being satisfied only to a weak degree.

How can the return from a hectare of feed land be raised? The state is allocating considerable resources for the reclamation of pastures. Over the past two five-year plans, approximately 45 million hectares of land have been irrigated. Interesting experience is available on the development of desert pasture land and the sowing of drought-resistant grasses on them. For example, such experience was accumulated at the Zadar'inskiy Breeding Plant in Chimkent. A considerable quantity of seed and also feed for sheep are being obtained here from the pastures.

But on the whole the meadows and pastures are not distinguished by generosity. The scientists reproach the production workers for their thoughtless use of the land. The Kazakh Scientific Research Institute of Meadow and Pasture Management has recommended that they be fenced. The kolkhoz and sovkhoz leaders and specialists assume quite properly that this will be too expensive. Indeed it would be necessary to surround millions of hectares of desert and semi-desert land with fencing. The agricultural workers are disturbed by still another factor. Where is it possible to obtain seed for wild-growing grasses and shrubs?

They could be used for raising the productivity of arid lands by a factor of 4-5.

The production of seed must be organized by the Scientific Research Institute of Meadow and Pasture Management. But it is not coping with this task. In 1982, it sold only 3 tons of seed. And this year also the amount of seed procured is inadequate.

It cannot be said that the party, soviet and agricultural organs are devoting only a small amount of attention to the feed problem. Meetings of the councils of rayon and oblast agroindustrial associations and plenums of rayon committees, oblast committees and the Central Committee of the Communist Party of Kazakhstan have been dedicated to this problem. Fine solutions were adopted. But they are being carried out only in a weak manner.

Reliable supplies of coarse feed have been created at a number of farms. The laying in of silage is continuing. But there are also some other facts worthy of note. Almost one third of the hay checked in Kzyl-Orda Oblast turned out to be of sub-standard quality. Low quality haylage was prepared at sovkhozes and kolkhozes in Aktyubinsk Oblast. Information is being received regarding the weak preparation of farms for winter.

And if to the above-mentioned facts we add the frequent replacement of agricultural specialists and leaders and the weak publicizing of leading experience, then it becomes more easy to understand why one third of the republic's farms have not coped with this year's plan for the sale of meat to the state. Overall, since the beginning of the five-year plan, Kazakhstan has fallen behind in its obligation to the state by more than 200,000 tons. An important task of the agroindustrial associations is that of raising backward farms to the level of leading ones. This constitutes a powerful production reserve.

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CSO: 1824/45

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UDC 636.4:631.145

RECOMMENDATIONS FOR RAISING HOG PRODUCTION IN MOLDAVIA

Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 8, Aug 84 pp 28-29

[Article by V. Zabulika, director of the Laboratory on Joint Planning of the Agro-Industrial Complex of the NII [Scientific Research Institute] of Planning, Moldavian SSR Gosplan: "Ways of Developing Hog Raising in the Meat Sub-Complex"]

[Text] The decisions of the May 1982 Plenum of the CPSU Central Committee indicated further improvements in the structure of feeding the population by increasing the production and consumption of meat and other animal products. In Moldavia, with the goal of increasing meat resources, it was recognized as expedient to accelerate the growth of pork and poultry meat production.

Pork occupies the largest proportion in the republic's meat balance--over 50 percent. The development of hog raising is being facilitated by the developed material-technical base of the branch and by the introduction of the achievements of scientific and technical progress. Over 80 percent of marketable pork is now produced on an industrial basis.

In the republic considerable work has been done in the specialization of hog raising, as a result of which the following types of specialized enterprises have been developed--for a complete production cycle; for the reproduction of piglets; for raising piglets; and for fattening hogs. In addition, kolkhozes and sovkhozes have farms that are involved in the production of piglets, which they then submit to inter-farm enterprises for fattening or which they partially fatten directly at their place of birth.

A fairly stable system of large specialized breeding enterprises, belonging primarily to the republic's ministry of agriculture, has developed. In 1982 about 80 percent of the pedigree herd was produced in state enterprises.

The functional ties that have developed between breeding and commercial enterprises have certain shortcomings. First of all, breeding enterprises sell young with great fluctuations in numbers sold according to months, whereas industrial technology requires uniform delivery of piglets to replace the animals that have been discarded.

For this reason it would be expedient to restructure the system of pedigreed hog raising and to create a stock breeding farm for every commercial hog complex for the purpose of supplying replacement young in synchrony with the needs of technology and with the goal of rendering production less expensive. While doing this, pedigree hog breeding plants and sovkhozes in which lines and breeds of hogs earmarked for resupplying stock breeding farms are being improved should be retained.

Greatest effectiveness is achieved by complexes having a full production cycle. This is why for such types of enterprises, where the processes of reproduction, raising and fattening of animals are integrated, production workers should be oriented toward the future.

However, considering that in the near future enterprises will play a considerable role in the production of commercial pork and that the reproduction of piglets is a complex and expensive process, it would be expedient, in our opinion, to concentrate the mother herd in large enterprises for the reproduction of stock with the goal of selling young to kolkhozes, sovkhozes and the owners of private plots who may wish to purchase it.

One of the most complicated problems involves supplying animals with feed. The feed base is lagging behind the branch's needs. In 1981 6.3 quintals of feed units were expended per animal, as compared to the recommended norm of 7.9 quintals. Frequently, low quality feed is used, which is reflected in the productivity of hogs. All of these factors result in the prolongation of the fattening period and in the extensive use of animals. In our republic on the average for 1976-1980 pork output per hog available at the beginning of the year equalled 60 kilograms, whereas in the Estonian SSR, for example, the figure was 87 kilograms.

The increase in pork production is tied to the efficient use of animals to a significant degree. Here there are still undiscovered reserves. In connection with shortcomings in the use of the mother herd the norms for discarding animals are exceeded, which in turn decreases the level of productivity since adult animals are more fertile. There is also a sharp increase in the need for pedigree young as replacements. In order to fulfill the production program, complexes are forced to maintain a 20-30 percent larger dairy herd than envisaged by technology, resulting in additional expenditures of resources.

In raising the effectiveness of hog raising the efficient use of the commercial herd is very important. In 1981, 80 percent of the herd available at the beginning of the year was sold for pork, which points to an insufficient level of intensiveness within the branch (in countries with developed hog raising this indicator reaches 15 percent). Underproduction is related to a large degree to the low weight on the hoof of animals sold for slaughter.

Successful branch development also depends to a large degree on the availability of educated and skilled cadres. Servicing complexes is much more difficult than servicing farms because in the former highly efficient technology, complicated equipment and hybrid animals that are more demanding of their

environment are utilized. This is why cadres must have special training, education and experience. The current state of affairs cannot be considered satisfactory as of yet. In 1982 of all those working on hog raising farms only 22.5 percent had a secondary and only 0.7 percent--a secondary specialized education. The rest had an incomplete secondary education. Of the workers, 0.5 percent are young people to 18 years of age, 38.3 percent--ages 18-29, and 61.2 percent--ages 29 and over. Farm workers acquire a certain amount of experience, knowledge and skill in the process of working. However, a large proportion of livestock farmers has a length of service of only up to 3 years (17.4 percent) and 3-5 years (27.7 percent).

One of the important ways to secure cadres and to stimulate their work is the introduction of collective contracts. In order to use the given method it is essential to work out progressive norms for feed expenditure and wage payments with a consideration of the productivity of animals, the quality of production and the achievement of end results.

It is essential to more fully utilize reserves for increasing meat in the industrial sphere as well. One way that yields results is to process hogs using the cropping method, which achieves an increase in pork output of 5.5 percent as compared with removing the skin. However, in the republic in 1981 the proportion of pork produced using the cropping method comprised only 17.8 percent.

Deserving of attention is the technology of cropping from hog skin with the use of kray districts for preparing protein stabilizers and food gelatin as well as animal feeds.

Improved effectiveness in the meat industry can be achieved also by processing hogs on a provisional basis. With the slaughter of animals directly in enterprises, losses comprise up to 40 rubles per ton of livestock.

For the more efficient utilization of raw materials it is expedient to increase the proportion of industrially-processed meat. In 1981 the proportion of industrially-processed meat comprised 65.9 percent in Moldavia, 70.3 percent in Latvia, 75.8 percent in Lithuania and 78.9 percent in Estonia.

It is essential to achieve industrial processing of subproducts, which yields up to 100 rubles of profits per ton as compared with sales in natural form.

We feel it expedient to increase the proportion of sinewy meat earmarked for retail trade using meat in carcasses, which will enable us to better utilize feed bones, which in a dehydrated state contain 40 percent protein and 18 percent fat.

Raising the effectiveness of production in the meat industry depends to a great extent on uniform deliveries of livestock for processing. In the republic livestock raw materials, and pork in particular, arrive at meat combines on an irregular basis, which results in the inefficient use of equipment and

workers in industry, in allowing workers vacations with the permission of the administration, in overtime work, and in the final analysis, in the turnover of cadres.

Certain losses are suffered by industry as a result of the stressful condition of animals, trauma, scratches and abrasions due to transport in vehicles that have not been adapted to the shipment of livestock. This is why it is essential to make a transition to direct ties between the agricultural enterprise and industry and to utilize specialized transport vehicles which increase capacity by 50-60 percent, decrease animal trauma by 15-20 percent and decrease shipment costs by 29 percent.

We feel it is timely to make the transition to the special purpose program principle of planning, to integrating all production links of pork production, and to the unification of hog raising complexes and enterprises of the mixed feed and meat processing industries within the specialized agro-industrial association Svinoprom [Hog Raising Production Association].

The orientation toward the output of the final product within a single system eliminates some of the questions that arise now with the departmental approach to planning; it will enable us to improve the management of the sub-complex and to increase the production of pork and pork products.

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CSO: 1824/023

LIVESTOCK

CONFERENCE ADVANCES CENTRALIZED MEAT, MILK DELIVERY SYSTEM

Moscow SEL'SKAYA ZHIZN' in Russian 25 Sep 84 p. 2

[Article by A. Trubnikov, Belgorod Oblast: "The Advantages of Direct Ties"]

[Text] Recently there was an all-union seminar-conference on the problems of direct ties between enterprises and processing enterprises. Representatives of the ministries of the meat and dairy industries of union republics became acquainted with the experience of organizing the centralized transport of milk and meat in Belgorod Oblast and the Belorussian SSR and determined ways to more widely introduce this progressive method for procuring livestock products.

Belgorod workers were essentially the first in the country to complete the transition of milk procurement to a centralized delivery system--since the start of the year over nine-tenths of the volume of production has been delivered by them from farms to plants, and a large portion was delivered in refrigerated form. In the enterprises of Belorussia about three-fourths of livestock is procured in this way, and many of the republic's rayons have already completed the transition to direct ties. Of special interest is the experience of Slonimskiy Meat Combine and its partners.

What is the situation in other regions? Centralized delivery of milk is being introduced successfully in the Estonian SSR, Khabarovsk and Altay krays, and Volgograd, Leningrad, Ternopol and Ivano-Frankovsk oblasts; of livestock--in the Lithuanian SSR and a number of other places. In the country as a whole the pace of procurement of livestock products directly in kolkhozes and sovkhozes is insufficient.

Last year only 28 percent of milk and 23 percent of livestock were received in enterprises. Now these indicators equal 24 and 45 percent respectively as compared with the levels achieved during the same period last year. The ministries of the meat and dairy industries of Moldavia, the Kirghiz, Kazakhstan and Latvia did not fulfill their quotas. Work is only at the beginning stages in the Uzbek SSR and indicators are low in the Turkmen and Azerbaijan SSR's. Among the oblasts of the RSFSR, Gorkiy, Kirov and Kurgan oblasts as well as the Tatar ASSR are especially lagging behind.

What is holding back the dissemination of the progressive procurement method? This was discussed by the ministers of the meat and dairy industries of the USSR and RSFSR, Ye. I. Sizenko and V. S. Konarygin as well as by others.

As Belgorod and Belorussian experience show, success can be achieved only if the problem is dealt with with the participation of all links in the agro-industrial complex. In Belgorod Oblast the operations of partners are coordinated and directed by the CPSU oblast committee and executive committee. Here strict controls are put into effect over the fulfillment of approved resolutions. By maximally utilizing internal reserves, kolkhozes and sovkhozes, processors, builders and transportation workers built and renovated dairy platforms in enterprises and built paved roads from them to roadways. The shortage of transportation means was made up for by using agricultural funds; regular KamAZ vehicles were equipped with special trailer capacities, and some written-off tanks were put back into use.

There was also concern for the training of cadres. Machinists of refrigerated systems, laboratory workers and drivers-receivers of milk were trained. In rayon associations of Sel'khoztekhnika [Agricultural Equipment Association] special sections were organized and 347 adjusters were trained for them in order to maintain technological and refrigeration equipment in constant readiness on dairy platforms.

Unfortunately, this approach is not used everywhere. Let us take, for example, the enterprises of Voronezh Oblast. They have at their disposal the same resources as their neighbors, but less than one-third of procured milk is obtained via centralized delivery.

Many processors, complaining about the shortage of their own transportation means, do a poor job of utilizing vehicles belonging to Sel'khoztekhnika and regular vehicles for their deliveries, as is done in Estonia and a number of oblasts in the RSFSR. Sometimes even that which is available locally is only half utilized. In Pskov and Ryazan oblasts, for example, the productivity of an auto tank for milk is almost half that found in Leningrad Oblast. There are still frequent cases in which transport organizations avoid participating in transporting livestock products because they do not wish to be responsible for their preservation and quality. This is the position taken, in particular, by the workers of RSFSR Minavtotrans [Ministry of Automobile Transport]. Here a weighty word must be said by soviets of agro-industrial associations and by party and soviet organs.

Many unsolved problems were discussed at the seminar. The first secretary of the Belgorod Oblast CPSU committee, A. F. Ponomarev, reminded us that in the oblast's kolkhozes and sovkhozes there are over 20 types of refrigeration equipment. This equipment is not dependable and frequently breaks down. There are few spare parts. Evidently, more highly-productive pieces of the same type should be produced; their shortage is one of the main reasons for the delay in the introduction of centralized deliveries in other regions as well. The building of garages and the creation of the corresponding repair base in the associations of the meat and dairy industry should have begun in earnest a long time ago.

Here is another problem. Enterprises as a rule do not have the mechanisms needed for washing and steaming milk tanks, and they are forced to allocate special transport vehicles for delivering usable waste. Thus there are extra expenditures of means and a deterioration of a valuable product.

Of course, the introduction of the progressive method requires both effort and capital investments. But these are repaid within 1-1.5 years. According to calculations of the VNII [All-Union Scientific Research Institute] of Agricultural Economy, expenditures of kolkhozes and sovkhozes decrease by an average of 4 rubles 27 kopecks per ton of livestock and by 2 rubles 30 kopecks per ton of milk with procurement taking place locally. In the country as a whole the savings reaches tens of millions of rubles annually. Processors are also not losers. In the very same Belgorod Oblast thanks to the high quality of milk all butter produced during the last 8 months has been of the highest quality.

By introducing centralized deliveries, livestock farmers and workers of the processing industry are striving toward a genuine partnership and cooperation to replace mutual complaints. The acceleration of this process depends on the joint efforts of all APK links. A large role here is played by socialist competition on the basis of cooperation agreements which will enable enterprises to increase joint responsibility for increasing the production and procurement of products and for improving their quality.

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CSO: 1824/35

LIVESTOCK

DIRECT CATTLE PROCUREMENT IN KOLKHOZES, SOVKHOZES ADVANCED

Moscow SEL'SKAYA ZHIZN' in Russian 11 Sep 84 p.1

[Editorial article: "Improving Direct Ties"]

[Excerpt] Thousands of persons are involved in the fate of that which is raised in the fields, in orchards and vegetable plantations and that which is produced on farms and in complexes. A great deal depends on their business-like attitude, zealousness and initiative--how efficiently agricultural products will be used and whether losses will be curtailed during shipment, storage, sales and processing.

As we know, recently interrelations among all branches of the agro-industrial complex have become trustworthy, stable and dependable. This is why there has been an increase in responsibility for the end results of work and concern in all links about the further fate of the harvest and of livestock products. Since soviets of agro-industrial associations have been successful in eliminating many departmental barriers, new and very significant possibilities have appeared to expanding direct ties of procurement, transport and trade organizations with the producers of products--kolkhozes and sovkhozes.

The USSR Food Program emphasizes the importance of an accelerated transition to the reception of milk, livestock and poultry directly in enterprises. Moreover, it has been recommended that in addition to the building of large enterprises to process and store agricultural products, small enterprises be built near kolkhozes and sovkhozes wherever this is economically feasible. This will aid in eliminating long-distance shipments during which many products perish. It is important to expand the local network of reception procurement points.

The enterprises of the Belorussian SSR meat and dairy industry have been involved in direct ties successfully for several years. Suffice it to say that up to 90 percent of the republic's enterprises having a plan for the sale of milk and meat deliver their products locally. Procurers concerned themselves ahead of time with how and with what to ship these products. Of course all of this--receiving products directly in the enterprise and having transportation vehicles handy--requires a fair amount of work. Certain outlays and considerable organizational work are needed. By creating the specialized

transport administration, Belmyasomoltrans [Belorussian SSR Meat and Milk Transport Association], which unified the necessary quantity of cost accounting motor vehicle enterprises with affiliates, the republic solved a problem of state-wide importance.

In recent years interesting experience involving direct ties has been accumulated in the enterprises of Stavropol Kray. Here almost half of the procured herd of cattle and 90 percent of poultry are received locally and shipped out via specialized transport vehicles. This is an example of the unification of the efforts of agricultural organs, procurers and meat-processing enterprises, which operate in harmony without departmental ambitions.

It would seem that the advantages of direct ties are apparent and that doubts about their expediency could hardly arise. But there can be no argument that it is not enough to just have the desire to make the transition to the new, truly progressive form of procurement. Unfortunately, many enterprises, procurement organizations and processing enterprises continue to underestimate this form of procurement, which has come out of practical circumstances and been proven itself well in practice. References are made to various organizational and material difficulties and to departmental hindrances that arise. But if workers were able to eliminate them in one place, they cannot be that formidable in another. This is what we would like to remind the procurers of Ivanovsk, Sverdlovsk and Orenburg oblasts of who have curtailed the reception of milk directly in enterprises.

Those who are preparing to make the transition to direct ties should study the experience of Belgorod Oblast, where the transition was made to the delivery-reception of milk directly where it was produced. Careful preparations were made for this transition. Here are several examples to provide an idea about the scale of all work. During the years of the ninth and 11th five-year plans in the oblast workers managed to build over 800 kilometers of intra-enterprise paved roads so that during periods of bad weather it would be possible to travel without problem to central dairy farms and to ship products from enterprises using the specialized transport vehicles of procurers in a timely manner. In addition, 247 central dairy farms were built and renovated.

There were considerable expenditures. But everyone was convinced that this form of dairy procurement had proven itself fully. By introducing it, kolkhozes and sovkhozes freed 200 units of transport and 800 drivers and expeditors and used them to perform other jobs. By means of this alone there was a savings of 4.4 million rubles and enterprises of the dairy industry decreased annual transportation expenditures by 700,000 rubles. Prior to the transition to direct ties in 1973 only 5.3 percent of the milk sold to the state by the enterprises of Belgorod Oblast was first quality. Last year this indicator reached almost 90 percent. In 3 years of the current five-year plan the oblast's kolkhozes and sovkhozes have been paid over 31 million rubles for the sale of high quality milk.

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CSO: 1824/021

LIVESTOCK

INCREASED PRODUCTION, LOWER OUTLAYS IN RSFSR LIVESTOCK SECTOR

Moscow IZVESTIYA in Russian 22 Sep 84 p 2

Article by F. Seleznev: "More Output -- Fewer Expenditures"

Text It seems that it was only recently that the operational results of the livestock breeders for the past wintering period were summarized and the leading figures of the competition were honored, those who had achieved the highest final results. And at the present time we are already discussing the further development of the all-union socialist competition of the livestock breeders for the successful carrying out of the new livestock wintering period.

But any new campaign carries the stamp of the previous one -- its experience and lessons. To take these factors into account, to consolidate the results already achieved, to correct shortcomings and to mobilize reserves -- this is what is required.

It was from this standpoint that the results of the last wintering period were discussed during an expanded meeting of the RSFSR Council of Ministers, in which the chairmen of the councils of ministers of autonomous republics, kray executive committees, oblast executive committees, the leaders of local soviet and agricultural organs and leading production workers participated.

An important reason for this thorough analysis of results was the delivery to the Russian Federation of the Diploma of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee for having achieved the highest results in the all-union competition.

And the results were reassuring. Compared to the previous wintering period in the Russian Federation, the purchases of livestock and poultry during this period had increased by 668,000 tons, milk -- by 445,000 tons and eggs -- by 787 million units. And this occurred simultaneously with growth in the numbers of livestock and poultry. Production expenses decreased substantially on many farms -- expenditures for feed, labor and resources per unit of output.

What can explain these fine changes?

The chief reason lies in the fact that in recent years a new approach has been employed in the republic for solving the principal problem -- the accumulation and efficient utilization of feed. Changes have taken place in the types of feed and in the rations fed to the livestock.

Actually, during the 10th Five-Year Plan, at a time when the kolkhozes and sovkhozes were beginning to allocate considerably greater quantities of grain forage for satisfying the needs of public animal husbandry, their leaders reduced noticeably the amount of attention being given to the production and procurements of coarse and succulent feeds. The concentrate type of feeding for animals began to predominate even in dairy cattle husbandry, where grain forage constituted up to 30 or more percent and in hog raising -- up to 95 percent. In 1980 the expenditures of concentrated feed per kilogram of milk on many farms almost exceeded by twofold the zootechnical norms. Many believed that this would lead to an increase in the milk yields. But this did not happen. And the number of barren cows began to increase.

In recent years, the correct conclusions have been drawn from these facts. A program has been launched aimed at reducing the amount of concentrates in the livestock rations and increasing the succulent and pasture feed content. The structure of the feed fields has changed. Many farms have converted over to a more effective type of feeding, with bulk feed, particularly hay, predominating in the livestock ration.

Such a turning point was reached last year. At that time, the livestock breeders of Russia had laid away considerably more coarse and succulent feed than usual. In the process, they procured 15 percent more hay. True, there were fewer concentrates. But the ration had become richer and this played a decisive role: an increase took place in the average delivery weight per head of cattle and growth was also noted in the average milk yield per cow.

The experience of a master of the machine milking of cows at the Petrovskiy Sovkhoz in Leningrad Oblast T. Dmitriyeva, indicates that the path selected for reducing grain forage in the cow ration and increasing the proportion of coarse and succulent feeds is the correct one. She considers the following to be the "secret" for obtaining a high productivity for the herd at her sovkhoz -- for the winter, 2 tons of high quality hay are procured here for each cow and also 5 tons of root crops. In addition, 0.30 hectares of highly productive cultivated pasture land are made available for each cow on the farm and this amount is sufficient for ensuring that the animals are supplied with green feed throughout the summer period. Since a cow procures the feed itself on such pastures, it is constantly in active movement and this is necessary in order to obtain a high milk yield and also healthy progeny. It is by no means an accident that there are no barren cows on this sovkhoz farm.

This well known milkmaid and her farm assistant also have some other "secrets."

"Certainly" stated Tamara Ivanovna, speaking before a meeting of the Council of Ministers, "high milk yields cannot be obtained in the absence of a strong feed base, if labor and production have not been organized in an efficient manner, if good quality facilities or fine working conditions are not available for the livestock breeders and, most important, if reliable personnel are not on hand.

The personnel on this farm are an object of special concern for its leaders. One out of every three milkmaids here is a graduate of the local secondary SPTU /agricultural professional-technical institute/, where animal husbandry specialists are trained. Their retention on the farm is promoted by the conditions required for highly productive labor and good recreational conditions, as mentioned by T. Dmitriyeva.

In particular, a double-shift work regime for the milkmaids has been in effect for many years on the farm, today the collective contract is being employed and intraorganizational accounting has been mastered. Breeding work has been organized well on the farm.

All of this made it possible for the sovkhoz's livestock breeders to raise the average annual milk yield per cow last year to 6,556 kilograms, with a rather high fat content -- 3.91 percent. This year they have firm plans aimed at increasing the milk yield by still another 100 kilograms.

All factors considered, it would seem that this goal will be achieved. This same milkmaid, T. Dmitriyeva, obtained a milk yield of 5,111 kilograms from each of 50 cows in her group over a period of 8 months. This was 264 more kilograms than were obtained by this same date last year. No less than 7,200 kilograms will be obtained prior to the end of the year. It should be mentioned that her daughter Olga, who obtained a milk yield of 6,000 kilograms, works at this same farm.

If we compare these indicators against the averages for the Russian Federation, then it would appear that one cow at the Petrovskiy Sovkhoz, in terms of its dairy productivity, is equal to three being maintained on the farms of other enterprises. Hence it is easy to imagine the tremendous reserve that is available through the creative introduction into production operations of the experience of leading figures in the competition, the rejection of the concentrated type of livestock feeding and the conversion over to the more effective hay-silage-haylage type of feeding involving a minimal content of concentrated feeds.

A great amount of interest is being displayed in this regard in the experience of hog fattening farms in Belgorod Oblast. At the Rossiya Kolkhoz in Shebekinskiy Rayon, just as at many others, extensive use is being made of bulk feed, especially mixed silage, which is based upon the use of corn ears of milk-waxy ripeness. Roughly 3-4 tons per sow are being placed in storage.

The head of the hog farm, N. Druzeva, believes that the use of such silage made it possible to reduce the proportion of concentrates in the hog ration to 67 percent and to realize a savings of 7,000 tons of grain annually. Moreover, the average daily weight increases rose and now amount to 450-500 grams. Importance is also being attached to the fact that the production cost for a quintal of weight increase has decreased sharply. Today it costs the farm 115 rubles -- one and a half times cheaper than the average for the republic.

The experience of many other farms throughout the republic underscores the high effectiveness of mixed silage. Greater quantities of this silage are being placed in storage with each passing year. Compared to 1981 when 2.5 million tons were procured, in 1982 -- 3.5 million and in 1983 -- 5 million tons. The plans for this current year call for 9 million tons to be laid away. But this volume, as mentioned during a meeting of the republic's Council of Ministers, is a minimum figure without which it is impossible to proceed.

The forthcoming livestock wintering period will not be an easy one and thus special importance is being attached to the efficient use of all types of feed.

Many opportunities are available for augmenting the feed supplies: sugar beet and potato haulm, the aftergrowth of grasses, secondary products of the grain economy and waste scraps from fruit and vegetable products and also from the food and meat and dairy industry. We are reminded of the need for making the best use of these additional sources owing to the fact that the feed procurement rates for the republic as a whole are still lagging behind last year's rates.

Equal importance is also being attached to the thrifty use of the feed that is procured and to organizing its thorough preparation for feeding to the animals. All of the conditions are available for accomplishing this. There are 45,000 feed preparation shops on farms throughout the republic, although they are not all in proper working order.

In searching for reserves for increasing the production of animal husbandry products, the participants in the meeting directed attention to the numerous incidents involving the dragging out of the livestock raising periods. There are still farms where the cattle are being fattened over a period of 850 days and the hogs -- up to 580 days, or greater than the norm by a factor of two. And this involves overexpenditures of feed and unproductive expenses.

According to estimates by specialists, the republic now has cattle at its disposal, the genetic potential of which is making it possible to increase by almost threefold the production of milk and meat.

The republic's Council of Ministers has drawn the proper conclusions from the results of last year's wintering period and has tasked the ministries and departments, the councils of ministers of autonomous republics, the kray executive committees and the oblast executive committees with exercising strict control over the completion of all field operations and the preparation of the farms for the forthcoming livestock wintering period.

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CSO: 1824/56

REGIONAL DEVELOPMENT

ARMENIAN APK COMMISSION REVIEWS PROGRESS OF AGRICULTURE

GF040634 Yerevan SOVETAKAN AYASTAN in Armenian 7 Oct 84 p 1

[Text] Considerable work has been done during recent years to financially strengthen the kolkhozes and raise the profitability of their production. The results are already evident. In comparison with the 1981-1982 period the gross revenues of the kolkhozes in 1983 has increased by 6.2 percent. Production profitability has reached 22.6 percent. The number of kolkhozes working at a loss has decreased 3.5 times. According to this year's plans, it is projected to increase the gross agricultural output in the kolkhozes by 14.7 percent and the true revenues by 17.6 percent in comparison with 1983.

Reviewing the question of improving the basic activities of the republic's kolkhozes and the planning of capital investments, the Armenian SSR Council of Ministers Presidium Agro-Industrial Complex Affairs Commission noted that due to slack supervision by the Armenian SSR Agriculture Ministry, the people's deputies rayon soviet executive committees and the rayon agro-industrial associations councils, serious shortcomings have been revealed. In individual rayons (Ashtarak, Abovyan, Akhuryan, Ichevan, Masis, and Shamshadin) the average indicators of the first 3 years of the 5-year plan period have been overlooked during the formation of production and financing plans. Many kolkhozes are violating the balance of collection and consumption funds from revenues and are directing the gross revenue mainly toward consumption funds. Thus, sometimes the means allocated for the work compensation fund are even exceeding the volume of gross income. For example the kolkhozes in Ichevan, Razdhan, Stepanavan, and Koris Rayons have planned in the 1984 plans to raise work compensation for kolkhoz workers above the rates of labor production growth. In 67 kolkhozes in Oktemberyan, Shamshadin, Echmiadzin, Amasiya, Tumanyan, and Shagumyan Rayons necessary allocations have not been made on the basis of funds available.

There are gaps in the planning of capital investments. A considerable part of the capital investments are not being provided with corresponding material and technical resources. Due to a failure to distribute the means among many installations and not ensuring the fulfillment of their commissioning plans, the amount of incomplete construction has considerably increased in recent years. The kolkhozes have not secured the timely entrance of capital investments means in the state bank. There are many incidents when the kolkhozes are delaying the presentation of production and financing plans to the state bank which is reflecting negatively on the organization of their credit and audit work.

The shortcomings and violations in production and financial activities and in the planning of capital investments are also due to the loose supervision of rayon state bank branches.

The commission urged the Armenian SSR Agriculture Ministry, the rayon soviets executive committees and rayon agro-industrial association councils to strengthen the supervision and aid to production and financial activities of the kolkhozes and the planning of the capital investments, to take measures to eliminate shortcomings quickly and raise the standard of economic work in kolkhozes.

Following this, the commission reviewed the further specialization of large farms in the republic and the question of measures taken by the ministries of agriculture and fruit and vegetables regarding the production of grape and fruit trees during the period 1986-1990. It noted that there are serious shortcomings in the activities of tree farms. The work to make the newly-organized tree farms in Gakhdzrashen, Berkaber, and No 4 Farm of Bagramyan reach maximum output is being postponed inexcusably and this is basically because necessary capital investments are not being allocated for the construction of housing and production installations and labor and specialization cadres are not being replenished. Certain farms do not have the necessary acreage, the standard of cultivation is low and the quality of plants is insufficient. Due to the lack of individual vineyards and the loose supervision over the work that is being carried out, the proper kinds of plants are not being ensured. The situation is particularly disturbing in the growing of certain grape shrubs and pitted fruit trees. The production of walnut trees is not good. Moreover, sufficient work is not being carried out to restructure the internal irrigation systems of the farms. The Armenian SSR State Committee for Forestry Industry has not fulfilled the plans for the production of wild apple and pear seeds and the Armenian Consumers Society Administration has not fulfilled the plans for the production of apricot trees.

The commission adopted a decision affirming the 1986-1990 plans for the production of grape and fruit shrubs and the establishment of fruit and wild fruit groves at the farms of the Ministries of Agriculture and Fruit and Vegetables; and the production of grapevines on the farms of the Armenian SSR Agriculture Ministry Wine and Fruit Production Scientific Research Institute and the Armenian Agricultural Institute and made appropriate recommendations to the agroindustrial complex ministries, departments, and enterprises.

The commission heard a report by M. Gevorkyan, chief of the Armenian Main Administration for Water Resources Construction on the planning and construction of Yeghvard water reservoir and noted that the work rates are extremely slow. Corresponding recommendations were made to eliminate the existing shortcomings.

The commission also heard reports on other agroindustrial complex problems and adopted corresponding decisions.

CSO: 1824/91

AGRO-ECONOMICS AND ORGANIZATION

BELORUSSIAN RAPO STRENGTHS, SHORTCOMINGS DISCUSSED

Experience Noted, Problems Encountered

Minsk SEL'SKAYA GAZETA in Russian 28 Aug 84 p 2

[Article by A. Stul'ba, deputy chief, Main Administration for Agro-Industrial Complexes [APK] under the Belorussian SSR Ministry of Agriculture: "Inward and Outward: Experience, Problems, Future of the APK"; indented sections printed in boldface.]

[Text] New and fundamentally important in the work of RAPO (Rayon Agro-Industrial Association) is the fact that unlike rayon agricultural administrations, they have more efficient levers of management. That is to say the right to determine the amount of work and services being provided by service organizations to kolkhozes and sovkhozes, as well as most of the rates and costs for these services. This also includes the right to unite and redistribute capital investments and a part of material-technical resources, and, what is very important, the right to determine conditions for awarding bonuses based on the final products for managerial workers, as well as to specialists of all enterprises and organizations included in the association regardless of their departmental jurisdiction. Ample opportunities were given to the agro-industrial associations to organize and to use centralized funds, which were created at the expense of enterprises and organizations.

How do the agro-industrial associations in fact use those wide rights and opportunities which are at their disposal?

The style and methods of the work of the council of the Slonimsk RAPO, for example, deserve a positive rating. What is most important in their activity is that they managed to direct the work of all the partners towards the solution of highest priority, and most urgent issues of the day concerning the development of agricultural production.

Under new management, the responsibility of Rayon Selkhoztekhnika organizations for the state of technical service and quality of repairs of machines, tractors and other agricultural machinery has considerably increased. For this purpose measures were taken to improve contract relations and reconsideration of prices for the

technical services of machinery and equipment, and related work and services. The use of a more efficient milking machine, ADM-8 (milk pipeline 200), is increasing every year in kolkhozes and sovkhozes, and now more than 11,000 cows are milked with the above-mentioned equipment, which amounts to 80 percent of all livestock in the rayon.

A progressive system of economic relationship between Rayon farm equipment organizations and kolkhozes and sovkhozes was also introduced here. The salary of the workers in the technical service stations depends on the quality of repairs and their timeliness as well as on the absence of downtime in the work of the repaired equipment. The groups of fitters (electricians included) do not depend on a piecework system, but rather receive fixed wages with additional payment for quality work. The ratio of technical readiness for the equipment accepted for servicing amounted to 0.99-1.00 and instances of failure were reduced by more than a factor of 8.

With the organization of RAPO, vehicles from Rayon farm equipment organizations were used more often for the needs of kolkhozes and sovkhozes. This is fully evident now during harvest and preparation of fodders.

The collective principles received further expansion in the activity of Rechitsk RAPO. The council of Rechitsk RAPO examined the issue of organizing socialist competition based on the experience of Bershadsk RAPO in Vinnitsa Oblast; the goal was to unite the efforts of the enterprises and organizations included in RAPO, in order to ensure fast economic and social growth of the farms.

A lot has been done by the council of Polotsk RAPO to introduce the style and methods of one of the best RAPOs in the country--Novomoskovsk RAPO in Tula Oblast--in their own work. Following this example, unified administrations for managing the APK was organized in the rayon. Considerable work has been done to reevaluate and set prices for work and services provided by the partners. Control over the implementation of the decisions of the RAPO council has been improved.

The experience of Vileysk and Dokshitsk RAPOs with regard to improvement of methods of contract work also deserved positive ratings. In accordance with previously developed methods, the RAPO councils are organizing the verification of the fulfillment of contracts requirements and the accuracy of billing by the organizations that service kolkhozes and sovkhozes.

At the present time, one of the major directions in the activity of the association councils is the search for the ways to eliminate the isolation between APK enterprises and organizations, to establish direct links between them, and to create an atmosphere of active cooperation and mutual help. For example, the Mogilevsk RAPO council, in addition to the major indicators for plan fulfillment introduced the following additional indicators: for

milk and bread combines--percent of improved quality percentage of increase in goods to be produced; for construction organizations--percent of construction costs to be reduced (without violating construction time schedules); for Rayon farm equipment organizations--cost of gross production per 1 standard hectare and per 1 ruble of operational costs, etc.

The council of Kirchevsk RAPO is looking for ways to increase the responsibility of the Rayon farm equipment organizations for the running state of machine and tractor equipment and its efficient use. A unified engineering-technical RAPO service was organized in accordance with the decision of the RAPO council.

Every kolkhoz and sovkhoz has its own engineer-technologist who functions as a connecting link between the Rayon farm equipment organizations and the farms. There are also plans to change the system of accounting between the farms and the Rayon farm equipment organizations, and to base it on the annual limit of outlays for repairs, servicing and maintenance of machine and tractor pool that is assigned to each kolkhoz and sovkhoz. In addition, the limit of outlays should not exceed the actual level during the last 3 years, calculated per 1 ruble of gross production at comparable prices for 1983.

The work of the best agro-industrial associations is based on and follows the following principles: not to command, not to administer, not to substitute for farm managers in solving organizational and technological problems, not to stifle their managerial initiative, but rather to create favorable conditions for work. The study of the local situation testifies that there is a number of considerable drawbacks in the activity of agro-industrial associations. RAPO councils do not get down to work properly in all places. Some of them are reorganizing their work too slowly, do not show the necessary persistence and discrimination in using rights available to them. Others limit themselves to considering petty problems, do not sufficiently coordinate the activity of Selkhoztekhnika, Selkhozhimiya, and other organizations included in the association. They lack active control over the implementation of the measures to overcome lagging of economically weak farms.

In a number of rayons, the work to coordinate plans of economic and social development of the organizations included in the agro-industrial associations has not yet been carried out.

The fact that up to now many RAPOs have not yet organized unified services for the management of APK branches in the rayon should be considered a serious omission. As a result only the apparatus of the rayon agricultural administration, rather than the entire united apparatus of similar services, enterprises and organizations, ended up as the active organ of the RAPO. That is why very often the questions proposed for consideration by the council are prepared without a thorough analysis. The adopted solutions, as a rule, are superficial and irrelevant.

In many cases the amount of work and services provided by the Rayon Selkhozkhimiya and other service organizations to kolkhozes and sovkhozes, as well as the plans for contracted building-installation work done by construction organizations are approved in a perfunctory way.

Very often RAPO councils after reviewing the projects and plans for services provided by the partners do not correct a single provision in the plan. Perhaps because there is no need to do so?

As a matter of fact, there is a considerable need. The specialists of agro-industrial associations often lamented themselves: by increasing the volume of repair work, Selkhoztekhnika is after gross output. Agrochemists also do not take into consideration the interests of the farms. Land improvement specialists undertake only very expensive projects....

An important role in the system of economic interrelationships between the links in the agro-industrial complex is played by prices (rates) for services provided to kolkhozes, sovkhozes, and other agricultural enterprises and organizations. We should say that the effort to reevaluate prices and rates for work and services provided to kolkhozes and sovkhozes in Borisovskiy, Dzerzhinskiy, Nesvizhskiy, Baranovichskiy, Ivatsevichskiy, Berezovskiy, Verkhnedvinskiy, Kruglyanskiy, and Novoprudskiy rayons is being conducted unsatisfactorily.

In these rayons there have been instances when RAPO councils approved already existing price lists without analyzing their influence on the economy of the farms. They also set prices and rates which exceed the ones set previously by the appropriate price setting organs.

However, kolkhoz and sovkhoz payments to service enterprises and organizations that are based on rates that were not approved by rayon or oblast agro-industrial associations, irregardless of their level, are not allowed and are a violation of the state pricing policy.

Strengthening of contractual agreements is considered to be an important condition for the improvement of economic relations. As verifications show, a number of partner enterprises and organizations of agro-industrial associations, as well as kolkhozes and sovkhozes underevalue the role of contracts and avoid making contracts. Farm managers and specialists are not well acquainted with contract provisions. They often hand over the making of contract to incompetent individuals, who agree to obviously unacceptable conditions that are being unlawfully proposed by service organizations. The service organizations and enterprises however are rarely fined.

For example, Sharkovshchinskiy Rayon Selkhoztekhnika is subject to 160,000 rubles in fines and forfeits for delays in equipment delivery, not meeting repair deadlines, failure of repaired machinery which occurred through the fault of the service facility during the warranty period, and other violations. Also included in the above sum were unwarranted charges for work and services rendered. A part of these monies has been already repaid by the rayon Selkhoztekhnika, and the rest is being claimed through suits.

We often criticize our partners because they sometimes levy unsubstantiated charges on farms. However, in many cases the managers and specialists of those farms are at fault. Very often they sign documents for completed work without thoroughly understanding the content of those documents. All this happens because of irresponsibility, lack of understanding of the economy, and lack of knowledge about the system of reciprocal payments.

Why do the farms sign every order? Just try not to sign, they respond. Then you will not get any spare parts and the fertilizers will not be delivered. This is an old way of thinking. One should not tolerate such deception squandering of resources. The partners now are under the same roof. One has means to influence them. An economist planner must know what he pays for.

The right of RAPO's to set up and use centralized funds for economic incentives, social and cultural purposes, the construction of housing, and development of production by deducting funds of enterprises and organizations included in the association, as well as the kolkhozes and sovkhozes deserve special mention. In accordance with the decisions of oblast and rayon agro-industrial association councils 46.9 million rubles should be transferred into centralized funds.

However, only 3.7 million rubles were transferred at the beginning of the current year. A number of ministries and organizations, for example, Belkoopsoyuz [Belorussian Cooperative Association], Belmezhkolkhozstroy [Belorussian Inter-Kolkhoz Construction], Minsel'stroy [Ministry of Farming Construction], BSSR Minmyasomol-prom [BSSR Ministry of Meat And Dairy Production], and others used to prohibit the subordinated organizations and enterprises to transfer the money into the centralized funds of rayon and oblast agro-industrial associations.

Only after the situation under which centralized association funds are formed was investigated by the Presidium Commission of the BSSR Council of Ministers For APK Issues was this matter no longer, as they say, dead in the water.

The planning of the work of the RAPO councils also requires considerable improvement. Some of them do not discuss, nor resolve issues concerning the development of service and process enterprises for the agro-industrial complex. For example, the council of Mstislavsk RAPO simply listens to managers' reports, takes non-effective decisions such as: "to increase control", "to take measures", and "to raise standards". We doubt that it will have any effect.

The initial experience of the work of agro-industrial associations is instructive. Work experience of the RAPO councils showed that they are on the right track. Kolkhozes and sovkhozes, as well as the organizations that service them have begun to operate more efficiently, and to achieve high end results jointly. What is the most important thing today is to expand and to improve the work of these entities. The leading role in this difficult, but extremely important work belongs to RAPO.

Mogilev RAPO Operations Evaluated

Moscow EKONOMICHESKAYA GAZETA in Russian No 37, Sep 84 p 17

[Article by Candidate of Economic Sciences A. Garbuzov: "With An Eye Toward the Final Result"]

[Text] The Mogilev agro-industrial association was organized 2 years ago, one of the first in our oblast. During the time it has been in operation, agriculture in the rayon has been considerably improved. For the first 3 years of the 5-year plan, the plan to sell grain, potatoes, flax-fiber, vegetables, meat, eggs and wool to the government has been successfully completed. Gross output of kolkhozes and sovkhozes in the rayon has increased by 11 percent, and the efficiency of labor by 10 percent as compared to the average annual indicators of the 10th Five-Year Plan. All these appreciably affected the profitability of kolkhoz and sovkhoz production, which increased from 16 percent to almost 40 percent as compared to 1982.

It is gratifying to note that there are no longer any unprofitable farms left in Mogilevskiy Rayon. The increase in purchase prices certainly played an important role here. However, one should not diminish the role of the management organs. This can be supported by the following facts: even by excluding purchase price add-ons, profitable and low-profitability farms managed to get around 22 million rubles in net income for the rayon as a whole. The net income amounted to 31 million rubles, which is 2.4 times more compared to 1982.

States Nikolay Fedorovich Kononov, chairman of the Association Council: "From the first days of the association council's operation, it concentrated its attention on crucial economic problems, tried to regulate inter-branch communication and business relations between the partners in the association."

Not everything, of course, has been regulated properly, and there is a number of contradictions and unsolved problems. The difficult and most urgent problem in the work of the RAPO council probably has been and still remains is the regulation of economic methods of management. An important role in this is played by unified planning.

The position of Second Deputy Chief for Economics was added in the rayon ispolkom. The positions of Chief Economist for Organization and Payment of Labor, Economist for Social Problems, and Chief Economist for General Planning were opened in the planning department. The positions of Economist and Chief Economist for Operational Accounting were transferred and assigned to the agricultural administration staff. All this helps to coordinate more systematically and more effectively the formulation of production and finance plans for all the members of the association; consequently, the needs of kolkhozes and sovkhozes are taken into account first.

However, we should mention that the volume of work and service carried out by enterprises and organizations that serve agriculture is set by ministries and departments above them without taking into account the needs of kolkhozes and sovkhozes. The concerns of the issue are such, however, that these guidelines should be set for the partners of the farm directly at the rayon level, based on requests made by kolkhozes and sovkhozes.

At the same time, the RAPO council demonstrates sluggishness in the resolution of a number of important issues and does not fully use the rights given to it. For example, relations with reclamation organization on whom improvement of soil fertility largely depends have not been regulated yet. Very often the work they perform is not on time and low quality. That is why managers and specialists of the rayon farm administration expressed the opinion that in order to improve reclamation services funds allocated for projected work, technical service, and maintenance should be managed by RAPO. At the same time they suggest that the role of the customer be transferred to the association.

Equal relations between kolkhozes and sovkhozes and procurement organizations have not been established yet. Numerous shortcomings are being allowed in the organization of product collection directly at the farms. Centralized transfer of cattle is limited only by the services of motor transport. The drivers are not responsible for the condition of the cattle during transportation. This is the reason for misunderstandings which often take place between the farms and the meat combine. The RAPO council is able to eliminate these drawbacks and to achieve the coordinated activity between the manufacturers and the processors.

Currently, the RAPO effort is directed toward the solution of these problems. Its efforts have not been wasted. The relations between organizations and enterprises in the association are being regulated little by little, their activities become more and more coordinated, and this has a positive influence on the final results. Farms in the rayon overfulfilled the 6 month plan of the current year with sales to the government of the following products: meat--by 14 percent, milk--by 12 percent, and eggs--by 10 percent. The stock of all kinds of cattle and poultry has increased. The farms are engaged in a fierce effort to complete the harvest in the current year, in order to fulfill the first obligation toward the government with honor, and create a solid base for the further development of animal husbandry.

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CSO: 1824/670

AGRO-ECONOMICS AND ORGANIZATION

NORM SETTING FOR CAPITAL INVESTMENTS IN AGRICULTURE

Moscow PLANOVYE KHOZYAYSTVO in Russian No 9, Sep 84 pp 94-101

Article by S. Kzylkhodzhayev, head of a sector of the Central Scientific Research Economic Institute under the RSFSR State Planning Committee: "Norms of Capital Investments in Agricultural Production"

Text The establishment of optimal rates and proportions of expanded reproduction of fixed productive capital in agriculture is necessary to ensure an organic coordination of plans for capital investments and material and technical supply with planned rates of growth of gross agricultural output and improvement in the location, specialization and concentration of agricultural production throughout oblasts, krays and autonomous republics.

Norms are designed for workers of planning bodies, ministries and departments and can be utilized for:

preplan calculations of the need for fixed productive capital for the envisaged volumes and structure of agricultural production and determination of the volumes of capital investments required for an increase in fixed capital during the examined period;

economic evaluation of the variants of plans for the zonal specialization and concentration of agricultural production;

analysis of the effect of changes in the volumes and structure of agricultural production on the rates of growth of fixed capital and capital investments;

evaluation of the tendencies in the change in the levels of capital intensiveness of agricultural output, possibilities for lowering it and selection of the most efficient allocations of capital investments.

Principles of Norm Setting for Fixed Capital

Norms of productive capital are calculated according to the fixed capital of kol-khozes and sovkhozes for agricultural purposes. Fixed capital is calculated according to the replacement value, which is periodically revised by the state through reevaluations made with due regard for expenditures on delivery and the cost of planning and surveying work. Such an evaluation of fixed capital corresponds to its role in the process of production and multiple functioning in it.

Norms of fixed productive capital represent the efficient size and structure of capital (in value terms) necessary for the most efficient management of agricultural production during the corresponding planned period. The norm of sectorial capital provision is the size of fixed productive capital for agricultural purposes at the end of the planned period per hectare of area sown with agricultural crops and head of livestock and poultry.

The norm of the product capital intensiveness of agricultural output represents the need for fixed productive capital per ton and ruble of gross output (in comparable prices) of the forecast yield of agricultural crops and productivity of livestock and poultry.

Factors affecting the level of capital intensiveness of agricultural output can be divided into two groups. One of them depends on the level of organizational and economic activity of enterprises and the qualitative indicators corresponding to it--yield of agricultural crops and productivity of livestock and poultry. The other is connected with the material and technical provision of farms and the quality and value of fixed capital put into operation.

For the planning and long-term forecasting of the volumes of fixed productive capital and capital investments indicators of sectorial capital provision, which reflect the effect of zonal natural-economic conditions on their level, are the most efficient and stable base for consolidated norms of the need for fixed productive capital.

Norms of the yield, structure of sown areas, herd structure and productivity of animals of the final year of the planned period are worked out. This is due to the fact that for the calculation of the need for capital investments throughout 5-year periods the value of fixed productive capital should be determined in advance.

Norms of sectorial capital provision and capital intensiveness of agricultural output are calculated on the basis of the sector's tasks.

Norms are calculated according to "Methods of Working Out Norms of Productive Fixed Capital for Agricultural Purposes" coordinated with the USSR State Planning Committee and approved by the USSR Ministry of Agriculture.

The following technical and economic norms worked out by scientific research institutes and coordinated with the Scientific Research Institute of Planning and Norms, the USSR State Planning Committee and the USSR Ministry of Agriculture are widely used: of specific capital investments for the construction of new and expansion and reconstruction of existing production capacities in sectors of animal husbandry, sheep breeding sections and poultry farms; enterprises for the postharvesting treatment and storage of grain and seeds on kolkhozes and sovkhozes and production bases for the technical servicing, repair, storage and provision of the machine and tractor pool on kolkhozes and sovkhozes with fuels and lubricants; new cultivation structures, facilities for the storage of potatoes, vegetables and fruits and enterprises for the processing of agricultural products; water management structures; intrafarm motor roads, sovkhozes and kolkhozes. Furthermore, the following norms have been determined: of the need of kolkhozes and sovkhozes for

tractors, tractor trailers, combines and other agricultural equipment for plant growing; volumes of freight transport and the need for trucks and motor-vehicle trailers for freight transport on kolkhozes and sovkhozes; the need of kolkhozes and sovkhozes for machinery and equipment for animal husbandry and poultry breeding; capital investments for the establishment of vineyards and care of young plantings and so forth.

When norms are worked out, the basic directions in the further improvement in the location, concentration and specialization of agricultural production throughout zones, rayons, oblasts, krays and autonomous republics in the RSFSR are taken into consideration. Special attention is paid to the selection of allocations of capital investments ensuring the creation and improvement of the structure of fixed capital with due regard for the achievements of scientific and technical progress, increase and leveling of soil fertility, preservation of output, land reclamation and strengthening of the feed base of animal husbandry.

The following are also initial for the elaboration of norms: recommendations of sectorial and zonal institutes (farm management systems, flow machine system charts and so forth); accounting data of the RSFSR State Planning Committee and the RSFSR Ministry of Agriculture on the development of agriculture; statistical data and annual reports of kolkhozes, sovkhozes and interfarm enterprises.

Norms of productive fixed capital are calculated on the basis of the need for the full replacement of disused and increase in additional fixed capital. At the same time, norms are worked out with due regard for the maximum utilization of the existing productive capacities of agricultural enterprises. The calculation of norms of the basic elements of fixed productive capital is performed in accordance with the existing classification: buildings, structures and transmission gear (together with intrafarm irrigation-reclamation ones), power machinery and equipment (including tractors), operating machinery and equipment (including combines), transport facilities (including trucks), production and farm implements and tools, productive livestock, perennial plantings and other fixed capital.

Norms for plant growing are calculated for nonirrigated, irrigated and drained land and, on the average, for all land according to the following basic agricultural crops: grain crops, sunflowers, sugar beets, spinning flax, other leading industrial crops for specific regions, potatoes, vegetables, melons, perennial and annual grass for hay and green mass, silage crops (including corn), fodder root crops, hayfields, pastures, fruit plantings and grapes.

In plant growing many construction projects (sites and sheds for the storage of agricultural equipment, petroleum warehouses, technical servicing centers in departments (brigades) and so forth) are connected with the servicing of the process of production of several crops. The need for such facilities is determined per 1,000 hectares of cultivated land on the basis of the planned amount of equipment and their value is related to the appropriate crops in proportion to the relative share of the latter in the total volume of tractor operations. Expenditures per hectare of crop and per ton of output at mineral fertilizer warehouses and the value of facilities for the storage of grain, potatoes, vegetables and other products are related directly to individual crops.

Data on the balance value of existing reclamation systems and normative specific capital investments for the cultivation of new irrigated and drained land approved by the USSR Ministry of Land Reclamation and Water Resources are used for the calculations of the value of intrafarm and irrigation-reclamation structures. Since the structure of reclaimed areas in land is extremely diverse, there is a need for independent studies of the prospects for the development of reclamation so that the expected reclamation capital may be included in the consolidated indicators of norms of capital provision per unit of land in an oblast, kray and autonomous republic.

Norms of the need for agricultural equipment reflect the value of the entire complex of the machine system ensuring for the planned period the envisaged level of mechanization of production processes as applied to zonal conditions, the adopted technology of production of agricultural products and the envisaged growth of the yield of agricultural crops.

For the calculations of the specific value of equipment agricultural machinery and equipment are grouped in norms of capital provision according to their participation in the production of specific agricultural products.

Owing to the fact that general-purpose machines (tractors for basic soil cultivation, soil cultivating machines and implements, transport facilities and so forth) are used in the raising of several crops and the periods of performance of work on their cultivation do not coincide, the need for these machines is determined per 1,000 hectares of cultivated land. At the same time, use is made of the structure of sown areas by zones for the planned period. The need for tractors and agricultural machines is calculated with due regard for the structure of sown areas, volume of work, periods of its performance and productivity of units and for harvesting equipment, in accordance with seasonal loads in oblast terms (its quantity and standardization are differentiated by natural-climatic zones).

For the calculations of the need for trucks the annual volume of transport operations per calculated area of agricultural crops, that is, the tonnage of the basic types of freight--mineral and organic fertilizers, gross output, feed obtained elsewhere and so forth--is determined in advance by sectors. The volume of freight transport (in tons) is calculated with due regard for its recurrence. Next the share of hauls carried out by the transport of the farms themselves, trucks, tractor trailers, animal-drawn freight transport and transport enlisted elsewhere is established.

For the determination of the value of mechanization equipment prices are used according to a price list, to which a trade markup, transport expenditures on the delivery of machinery and equipment to farms and outlays on assembly and installation work are added.

By summing up the individual elements of fixed productive capital the normative need for it per hectare and ton of individual types of agricultural crops is established.

Norms of capital provision and capital intensiveness in animal husbandry are calculated for the new construction of farms and complexes as weighted mean values with due regard for the share of newly commissioned fixed capital and the functioning means of production remaining at the end of the planned period in accordance with the technology of agricultural production adopted for the planned period.

Owing to the big difference in the capital intensiveness and structure of buildings for the breeding stock, as compared with buildings for young and adult stock being fattened, specific capital investments for new construction and the value of places for animals in existing projects are determined in every oblast in accordance with the structure of the basic herd.

Norms of corresponding sectors reflect the specific capital of agriculture connected with the natural processes of its formation in the sector itself, such as perennial plantings, the basic herd of animals and expenditures on a fundamental improvement in land (the latter increase to an ever greater extent in connection with the need to increase land fertility). In the southern economic regions of the RSFSR the specific value of 1 hectare of fruit bearing orchards, small-fruit patches, vineyards, tea plantations and nurseries is determined according to perennial plantings and in the remaining regions, the averaged value of 1 hectare of plantings.

In animal husbandry, when the value of productive animals of the basic herd and work stock is determined, expenditures on the formation of the basic herd for raising young replacement stock of internal reproduction and on the purchase of stock of pedigree and improved animals are taken as the basis. The young replacement stock, when transferred to the basic herd, is evaluated according to the farm's actual expenses on breeding it and the purchased stock, at the prices of pedigree and local improved cattle, sheep, goats, hogs and horses.

Norms of sectorial capital provision include the specific value of the basic herd according to the corresponding types of livestock determined per head.

Expenditures of a noninventory nature, that is, the complex of investments for an improvement in the quality of land not connected with the construction of buildings and structures, are singled out as an independent element.

The complex of expenditures (without structures) includes expenditures on stubbing and clearing land of forests, shrubs and stones, cutting hillocks of grass, liming acid and gypsum soil and protecting soil against water and wind erosion. The amounts of these expenditures on reclamation are taken into consideration during the calculations of norms of the need for fixed productive capital by sectors and plants products in the normative capital provision per hectare of arable and agricultural land.

According to the degree of consolidation and goals of analysis average oblast norms of fixed productive capital for agricultural purposes include the following:

norms of sectorial capital provision and product capital intensiveness of agricultural output (according to types);

consolidated norms of fixed productive capital for agricultural purposes per hectare of agricultural land and hectare of arable land with the singling out of plant growing capital and animal husbandry capital and the inclusion of reclamation capital.

Norms of capital provision and capital intensiveness reflect the balanced need for fixed capital during the production of specific agricultural products according to the conditions of material and technical provision of the planned period.

Analysis of Norms

A draft of norms of fixed capital for agricultural sectors throughout oblasts, krays and autonomous republics in the RSFSR was worked out in accordance with the Method of Norming of Fixed Productive Capital. The indicated norms need a further approval in the localities with respect to the natural-economic and technical conditions of production in a region.

An analysis of the worked out norms has shown that for efficient production management on kolkhozes, sovkhozes and other state farms it is necessary to have, on the average, fixed productive capital for agricultural purposes worth 988 rubles per hectare of agricultural land in the RSFSR. With due regard for the long-term structure of sown areas, livestock population and increasing volumes of production the normative need for fixed productive capital per hectare of agricultural land increases 1.6-fold as compared to the actual capital provision of agriculture in the RSFSR in 1983. The increase in normative capital provision per hectare of agricultural land according to individual elements can be seen from table 1 /see following page/.

The reality of the normative level of capital provision is confirmed by the data as of 1 January 1983 of Leningrad and Moscow oblasts and the Karelian and Mari autonomous republics. In these regions actual capital provision per hectare of agricultural land is as follows: in Leningrad Oblast, 221 percent, Moscow Oblast, 169 percent, the Karelian ASSR, 150 percent and the Mari ASSR, 79 percent, as compared to the average normative need in the nonchernozem zone of the RSFSR.

The increase in the capital intensiveness of agricultural projects is dictated by the intensification of the processes of industrialization and concentration of agricultural production. Animal husbandry complexes, in which fixed productive capital of a volume of more than 5 million rubles is concentrated, have been developed.

In fixed capital norms a significant growth is envisaged through an increase in putting reclaimed land to use. At the same time, an increase in specific capital investments for more durable and technically improved reclamation systems is taken into consideration. This is envisaged in the norms of specific capital investments for irrigated and drained land for the 1981-1985 period worked out by the All-Union Association for Water Management Planning.

Table 1. Actual and Normative Capital Provision Per Hectare of Agricultural Land in RSFSR

Indicator	Fixed productive capital for agri- cultural purposes	Including		Perennial machinery (machines, equipment, trans- port facilities, im- plements and tools)		Pro- ductive and trans- mission gear including in- trafarm recla- mation struc- tures	Buildings, structures and transmission gear	Fixed productive capital for agri- cultural purposes
		Total	Buildings, structures and transmission gear	Machinery (machines, equipment, trans- port facilities, im- plements and tools)	Buildings, structures and transmission gear			
Capital provision per hectare of agricultural land:								
norm, rubles	988	640	80	263	72	13		
actually in 1983, rubles	633	414	34	140	69	10		
actually in relation to norm, %	64.1	64.7	42.5	53.2	95.8	76.9		
Structure of capital, %:								
norm	100	64.8	8.1	26.6	7.3	1.3		
actually on 1 January 1983	100	65.4	5.3	22.2	10.9	1.5		
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While the norm of value of a building and a structure per hectare of agricultural land rises 65 percent as compared with the actual level on 1 January 1983, the norm of value of reclamation structures increases 2.5-fold. At the same time, the need of agriculture for facilities for the storage of seeds and commodity output, warehouses for the storage of mineral fertilizers, intrafarm roads, garages, shops and so forth is met more.

The rates of growth of the value of buildings and structures are lower than the value of mechanization equipment and transport. As a result, the asset part of capital, as compared with the liability part, increases. In norms, as compared with the actually attained level on 1 January 1983, the value of equipment per hectare of land increases twofold and its proportion, by 4.4 percent.

According to our calculations, to attain normative capital provision, it is necessary to ensure an average rate of increase in fixed capital in RSFSR agriculture amounting to no less than 7.6 percent annually. However, in the last 8 years (1976-1983) the actual rates of increase in fixed capital per hectare of agricultural land on kolkhozes, interfarm enterprises, sovkhozes and other state farms were more than 8 percent.

In the normative need for fixed capital we envisage a certain leveling of economic conditions. However, the differentiation in the capital provision of farms still remains significant. In North-West and Central regions the specific size of fixed productive capital per hectare of agricultural land throughout oblasts varies from 1,047 to 4,765 rubles--differs 4.6-fold. It is higher than the average republic level, which amounts to 988 rubles, in Volgo-Vyatka, Central-Chernozem, North-Caucasus and Far East regions, that is, 1,101 to 1,238 rubles.

The fluctuations in norms throughout RSFSR regions are the results of the differences in the natural-economic conditions of production, specialization, level of intensification, scale and methods of production organization, utilization of existing productive capital and so forth.

The practical experience of farms in many oblasts and rayons indicates that the effectiveness of capital investments and yield on fixed capital are higher when the capital provision of farms approaches the normative one. In this respect the results of work of farms in Moscow and Leningrad oblast are significant, as compared with the average data of corresponding economic regions. On the average, in 1981-1982 kolkhozes and sovkhozes in Moscow Oblast, while the zonal level of gross output per hectare of agricultural land in the Central Region is 394 rubles, produce output worth 1,017 rubles, or 2.6 times as much, at the same time, having capital provision per hectare of agricultural land amounting to 2,566 rubles, or 2.7 times as much. In Leningrad Oblast gross output per hectare of agricultural land is worth 1,326 rubles, which is 2.5 times as much as the average harvest in the North-West Region, and capital provision amounts to 3,357 rubles--2.5 times as much.

Expenditures on a rise in the technical level of production pertain to the basic allocations of capital investments in agriculture, because this factor ensures more than 50 percent of the total increase in labor productivity. In

the next 2 or 3 years it will be necessary to increase the saturation of tractors per 1,000 hectares of arable land approximately from 11 to 14 units with their full outfitting with the appropriate set of machines and implements. According to the data of the All-Union Scientific Research Institute of Economics of Agriculture, the ratio of the value of agricultural machines to the value of the pool of tractors in the RSFSR, on the average, should be 1:3.15 as compared to the actual correlation of 1:1.60 in 1982.

It is important to speed up the additional equipping of livestock barns. On the republic's kolkhozes and sovkhozes as of 1 January 1983 only 92 percent of the cattle stock was provided with water supply and 48 percent, with mechanical feed distribution and manure removal was mechanized 79 percent. In hog breeding these indicators comprised 84, 67 and 87 percent respectively.

Farms are short of warehouses and structures for feed storage. For example, in Ryazan Oblast the provision of kolkhozes and sovkhozes with capital structures for the storage of silage and haylage comprises less than 50 percent and of fodder root crops, up to 2 percent and there are no facilities for the storage of hay at all. All this leads to considerable losses and a deterioration in the quality of feed. At the same time, calculations show that the recovery of capital investments in the construction of silage-haylage trenches does not exceed 2 or 3 years.

Under the conditions of growth of the capital provision of agriculture and replacement of the fixed capital of production kolkhozes, sovkhozes and inter-farm enterprises should form fixed productive capital in the direction of a rise in the proportion of the elements that under specific conditions play the most active role in the increase and preservation of the volume and improvement in the quality of output and in the growth of labor productivity (warehouses for the storage of products and mineral fertilizers, equipment, feed production facilities, productive livestock, perennial plantings, reclamation structures, roads and so forth).

The normative need for the fixed productive capital of plant growing is determined in the amount of 465 rubles per hectare of agricultural land. According to our calculations, for some types of farm products, on the average, in the RSFSR it is necessary to increase the capital intensiveness per ton of output (in rubles) as follows: grain crops, to 292 as compared to 201 on 1 January 1983; sugar beets, 48 and 77 respectively, spinning flax (fiber), 875 and 1,121, sunflowers, 216 and 242, potatoes, 165 and 188, vegetables, 175 and 165, melon crops, 84 and 93, perennial grass for hay, 295 and 121, annual grass for hay, 220 and 102, grass for green fodder, 85 and 28, silage crops, 65 and 13, fodder root crops, 87 and 58, fruits, 710 and 652 and grapes, 301 and 595.

The level of capital intensiveness also fluctuates for uniform crops cultivated in various zones. The normative value of fixed productive capital for the production of 1 ton of grain is 197 to 314 rubles in Central-Chernozem, Volga, North Caucasus, Ural and West- and East-Siberia regions, 360 to 403 rubles, in Central and Volgo-Vyatka regions and 517 to 583 rubles, in North, North-West and Far East regions.

A similar situation is also observed in other crops. The normative capital intensiveness per ton of vegetables changes throughout the economic regions of the RSFSR from 152 to 243 rubles, of potatoes, from 133 to 232 rubles, of sunflowers, from 141 to 299 rubles, of fodder root crops, from 43 to 113 rubles, of silage, from 39 to 124 rubles and of perennial grass hay, from 252 to 516 rubles.

The differentiation of norms is based on the natural and economic conditions of cultivated agricultural crops, their yield, structure of sown areas, level of mechanization of field work, production technology and so forth.

The yield of crop determines primarily the normative value of capital for the production of a certain type of product. When the yield of grain rises from 20 to 25 quintals per hectare, the normative capital intensiveness per ton of output declines from 292 to 255 rubles (by 13 percent). The normative need for capital, when the yield of potatoes is 150 quintals per hectare, amounts to 146 rubles, as compared to 165 rubles when the yield is 128 quintals per hectare. Every percent of increase in the yield makes it possible to lower the normative capital intensiveness of vegetables by 0.36 percent, of sugar beets, by 0.56 percent and of perennial grass hay, by 0.6 percent. Such a pattern is also characteristic for other crops.

For an efficient organization of the production of livestock products it is necessary to have, on the average, in the RSFSR 525 rubles' worth of fixed productive capital for animal husbandry per hectare of agricultural land. Sectorial capital provision per hectare of agricultural land fluctuates throughout oblasts, krays and autonomous republics from 180 to 2,429 rubles. The differences in capital provision are due to a set of factors, including the location of animal husbandry throughout zones, density of the livestock population and capital intensiveness of output. The data of table 2 point to the effect of the density of the population and specific structure of the herd on the normative provision of 1 hectare of agricultural land with the fixed capital of animal husbandry /see following page/.

In East-Siberia and Volga economic regions (lowest group of capital provision--346 to 365 rubles per hectare) sheep breeding--the least capital intensive sector--occupies a significant proportion among animal husbandry sectors. In the Volgo-Vyatka Region (average group of 684 rubles per hectare), along with sheep breeding, the share of more capital intensive sectors, that is, cattle and hog breeding, increases. In North, North-West and Central regions (highest group in terms of capital provision--797 to 1,225 rubles per hectare) dairy cattle breeding and hog raising predominate.

Big differences are also observed in the level of normative expenditures of fixed capital per head of animals according to their types. The norms of fixed capital of animal husbandry worked out for the RSFSR point to this: 2,869 rubles per cow, 986 rubles per head of young cattle, 318 rubles per head of hogs, 130 rubles per head of sheep and 44 rubles per laying hen. Therefore, when the proportion of cattle and hog breeding sectors in the production structure is increased, more capital investments will be needed.

Table 2. Density of Stock, Specific Structure of Herd and Normative Capital Provision of Animal Husbandry in Various Economic Regions of the RSFSR in 1982

Economic region	Stock population per 100 hectares of agricultural land, head			Specific structure of stock, %			Fixed productive capital of animal husbandry per hectare of agricultural land, rubles	
	total			standard				
	cattle	hogs	sheep	head	cattle	hogs	sheep	
North	33.6	18.7	0.5	32.5	82.7	17.2	0.1	898
North-West	49.6	45.4	4.8	53.8	73.8	25.3	0.9	1225
Central	38.0	20.5	8.0	37.4	81.3	16.6	2.1	797
Volgo-Vyatka	31.8	24.5	11.3	33.9	74.9	21.8	3.3	684
Volga	18.1	14.2	34.9	22.3	65.0	19.3	15.7	365
East Siberia	12.6	8.4	47.2	17.3	58.4	14.5	27.1	346

The strengthening of the normative base of agriculture will have a positive effect on the formation of the size and structure of fixed productive capital and the total equipment of kolkhozes and sovkhozes with capital. However, the increase and change in the structure of productive capital can give a significant effect only with a simultaneous improvement in its utilization.

Application of Norms for Capital Investment Planning

The normative method makes it possible to calculate the volume and structure of capital investments for a long- and medium-term period. The calculation is performed through the use of norms of fixed productive capital per hectare of agricultural land, arable land, basic crops, head of livestock and ton of output, not on the basis of the detection and optimization of the additional need for production capacities and specific projects.

The balance of fixed productive capital at the end of the planned period is determined through the multiplication of norms of capital provision per hectare of area sown with agricultural crops (or the capital intensiveness per ton of output) and head of livestock and poultry by the sizes of sown areas planned for the end of the period at the planned yield level (or by the volumes of production of plant products according to types), as well as the livestock and poultry population of the public sector. The increase in fixed capital and the expenditures on the replacement of fixed capital subject to withdrawal are calculated on the basis of the balance of fixed productive capital. This forms the basis for the determination of the amounts of capital investments necessary for the realization of the envisaged production program.

The calculation of the need for capital investments in projects for production purposes (without expenditures on the formation of the basic herd), construction and installation work, equipment and so forth is presented below (table 3) /see following page/.

Table 3. Calculation of the Need for Capital Investments for Development of Agricultural Enterprises (Without Expenditure on Formation of the Basic Herd)
(standard figures, in million rubles)

Indicator	Buildings, structures and transmission gear	Machinery, equipment, transport facilities, implements and tools	Perennial plantings, capital expenditures on land improvement and other fixed assets	Total fixed capital
1. Normative need for fixed productive capital for agricultural purposes at the end of the planned period	5,700	2,400	100	8,200
2. Expected fixed productive capital for agricultural purposes at the end of the base period	4,000	1,500	70	5,570
3. Capital investments for additional production equipment and increase in output (1-2)	1,700	900	30	2,630
4. Capital investments for simple reproduction of fixed productive capital:				
4.1 Average annual fixed productive capital (line 1+line 2):2	4,850	1,950	85	6,885
4.2 Average annual percent of withdrawal of fixed capital	4.0	12.5	5	6.4
4.3 Percent of withdrawal in 5 years	20.0	62.5	25	32.1
4.4 Value of fixed productive capital subject to withdrawal in 5 years (4.1X4.3)	970	1,219	21	2,210
5. Capital investments for simple and expanded reproduction of fixed productive capital for agricultural purposes (3+4.4)--total	2,670	2,119	51	4,840

To fill line 4.2 in table 3, it is recommended that the existing normative indicators of the extent of annual withdrawal of fixed capital be used.

On the basis of the existing norms of depreciation allowances designed for a full replacement (renovation), it is recommended that the annual withdrawal of buildings and structures be determined at the rate of 3 to 5 percent of their average annual value depending on the condition of buildings and structures and the existence of unadapted and dilapidated premises. An average annual norm of withdrawal comprising 11 to 13 percent of the average annual value of equipment can be applied for the determination of the withdrawal of fixed capital in the group "machinery, equipment and transport facilities." On the average, a withdrawal norm of 3 percent can be adopted for perennial plantings and other fixed capital.

When the total volumes of capital investments in the "agriculture" sector are planned, account is taken of the need for capital investments for the creation of fixed productive capital for nonagricultural purposes (industrial-productive, construction, trade and public dining), increase in incomplete and road construction and nonproductive capital investments.

Capital investments in basic production include expenditures on the creation of fixed productive capital for agricultural purposes at kolkhozes, interfarm enterprises, sovkhozes and other state agricultural organizations of the system of the USSR Ministry of Agriculture and the USSR Ministry of the Fruit and Vegetable Industry allocated for an increase in the production of agricultural products, as well as of the USSR Ministry of Land Reclamation and Water Resources, for the construction of reclaimed intrafarm systems and sovkhozes on reclaimed land, for the need for capital investments for the organizations of the State Committee for Supply of Production Equipment for Agriculture and for the electrification of agriculture.

The practice of capital investment planning shows the advisability for the introduction of the indicator of the actual capital intensiveness of output into the system of planned and report indicators of the activity of agricultural enterprises.

The indicators of the actual sectorial capital provision and capital intensiveness of agricultural output represent the initial base for planning the need for fixed productive capital and capital investments. An evaluation of the economic activity of agricultural enterprises according to specific capital intensiveness makes it possible to uncover the potentials for an increase in the efficiency of utilization of capital investments and fixed capital in individual agricultural sectors.

For the purpose of organizing reporting according to the indicator of the actual capital intensiveness of individual types of agricultural products, state statistics bodies (USSR Central Statistical Administration) made one-time surveys of capital intensiveness on a number of farms, for which the USSR Ministry of Agriculture, the All-Union Scientific Research Institute of Economics of Agriculture, the USSR Central Statistical Administration and the USSR State Planning Committee developed and approved a method of determining the capital intensiveness of output. The availability of a single method of calculating

individual elements of fixed capital related to specific agricultural products makes it possible to ensure the comparability and commensurability of the obtained levels of the capital intensiveness of agricultural output.

An analysis of the one-time survey of the capital intensiveness of agricultural output made on the Kolkhoz imeni 8 Marta in Vilnyusskiy Rayon, the Lithuanian SSR, has shown that sufficient information materials for the performance of the calculation of the capital intensiveness of agricultural products can be mobilized on farms.

The introduction of the evaluation of the economic activity of kolkhozes, sovkhozes and interfarm enterprises according to the indicator of specific capital intensiveness into practice will make it possible to have a more objective idea of the efficiency of utilization of productive capital and to increase the substantiation and balance of production plans, that is, to more fully take into consideration the real capabilities of enterprises.

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CSO: 1824/61

AGRO-ECONOMICS AND ORGANIZATION

TERMS OF PAYMENT FOR HIGH QUALITY GRAIN SET FORTH

Moscow ZAKUPKI SEL'SKOKHOZYAYSVENNYKH PRODUKOV in Russian No 8, Aug 84
pp 36-39

[Article by B. Tarasenko, director of the Financial Administration of the USSR Ministry of Procurement and V. Parshin, senior methodologist of the Financial Administration: "Conditions for Payment of High-Quality Grain"]

[Text] Grain reception enterprises carry out calculations for grain and oil-bearing seed sold to the state by kolkhozes and sovkhozes in accordance with laws on prices and on accounts conditions for grain products, to the Proposal on the Order for Concluding and Fulfilling Contractual Agreements Involving Agricultural Products and to Instruction number 9-1-79, "On the Order for Implementing Accounts with Kolkhozes, Sovkhozes and Other Enterprises for Grain, Seed of Oil-Bearing Crops and Grasses Being Sold to the State." In addition, in keeping accounts for grain and oil-bearing seed enterprises should be governed by the instructions and clarifications of the USSR State Price Committee, the USSR Ministry of Procurement and its local organs, and by specifications of accounts which have been made more precise and which have been supplemented while answering specific questions that arise in the course of grain procurement from enterprises.

Kolkhozes and sovkhozes deliver grain and oil-bearing seed to grain reception enterprises in the quantities and according to the schedule specified in contractual agreements. Every batch of grain and oil-bearing seed is accompanied by special form Number 1-skh on which the name of the enterprise and the sender (kolkhoz brigade or sovkhoz department), the number of the truck and to whom it belongs, the type of delivery, quality and weight are noted.

Grain reception enterprises that implement the procurement of grain and oil-bearing seed bear all expenses for shipping, expediting and unloading them. When grain and oil-bearing seed are shipped by means of transport vehicles belonging to kolkhozes and sovkhozes, grain reception enterprises reimburse enterprises for shipping and unloading expenditures according to norms and rates for the particular type of transport used to ship the grain and oil-bearing seed. The expenditures of enterprises with regard to the shipment of grain and oil-bearing seed are repaid for all distances from enterprises to the delivery point. Distances from the central farm as well as from brigades and kolkhozes and sovkhoz departments to the delivery point are determined

by rayon executive committees with the participation of representatives of the grain reception enterprise, the enterprise and the transport organization. Every grain reception enterprise is obliged to receive the corresponding information in good time, prior to the beginning of procurement.

Expenditures to pay fines for idleness of transport vehicles above established time limits in loading points are reimbursed to transport enterprises directly in enterprises. For delaying trucks which have unloaded grain and oil-bearing seed beyond accepted parameters (idleness), fines which are established by the price list of uniform rates for shipping loads using vehicles belonging to the corresponding union republic are paid out by the grain reception enterprise-receiver of deliveries only if deliveries are implemented according to a strictly-coordinated hourly schedule. If deliveries of grain and oil-bearing seed are made to grain reception enterprises located in the territory of another union republic, payments are made according to rates that are in effect in the union republic where the enterprise is found. The delivery to grain reception enterprises of ears of corn is reimbursed to enterprises for recorded weight expressed in terms of grain according to rates established for truck shipments of ears of corn.

The only document that confirms the sale of grain and oil-bearing seed to the state is the receipt that is filled out by the grain-reception enterprise using a blank pre-printed form. Receipt form Number PK-10 is issued to an enterprise for all grain and oil-bearing seed received in the course of 1 day for each crop, with the enclosure of one copy of invoice records included in the receipt. Receipt form Number PK-10 lists the numbers of all invoice records, the physical and account weight of grain and oil-bearing seed and the sum due for payment in accordance with calculations presented in records, and cost price according to quality. If enterprises deliver unit batches of grain and oil-bearing seed to grain reception enterprises the quality of each batch is determined and receipt form Number PK-9 is issued and all indicators concerning quantity, quality and cost of grain and oil-bearing seed received by the enterprise are filled out.

Very important in accounts with grain suppliers is that the accounts of grain reception enterprises for grain and oil-bearing seed sold to the state be calculated in accordance with its quality, which is determined according to an established order at the moment that the grain and oil-bearing seed is received.

Minimal conditions standards related to certain quality requirements have been established for grain and oil-bearing seed procured into state resources. Exceptions are made for grain and oil-bearing seed that does not meet minimal standards under the following circumstances: for moisture content and weed infestation, except grain and oil-bearing seed with harmful admixtures that are difficult to separate out (damaged seed, rubble, wild oats, Tatar buckwheat, corncockle, ortolan and others), with the permission of the councils of ministers of union republics; for divergences from other indicators of quality, including grain with weeds that are difficult to separate out, immature grain, grain and seed with an unusual odor, grain and seed with smut (maran [Translation unknown], common wormwood) with the exception of grain with a malt

or stale odor, with harmful admixtures above minimal standards and defective oil-bearing seed) with the permission of the USSR Ministry of Procurement and with a consideration of the need for grain and oil-bearing seed and the possibilities for using them.

Rice with grain admixtures (combined with weeds) greater than minimal standards that is received from enterprises in the form of an exception with the permission of the USSR Ministry of Procurement is reimbursed according to the following conditions: with the presence in rice of grain admixtures (combined with weeds) of over 15 percent and up to 35 percent there is a reduction in the price equal to 1 percent for each percent of grain admixture above base standards; with admixtures of over 35 percent it is reimbursed according to prices for feed barley and the fulfillment of the plan for the basic crop is not counted, but is recorded as procurement of a grain mixture. For the reception into state resources of rice grain with a content of grain admixtures of 15-35 percent and over 35 percent (combined with weeds) its content is regulated by the minimal standards in effect for rice grain (not shelled). In cases in which the councils of ministers of union republics allow the reception of grain with an increased admixture of trash (with the exception of admixtures that are difficult to separate out) the content of weed admixtures is limited by the quantity foreseen in this permission.

Grain and oil-bearing seed delivered to grain reception enterprises are reimbursed to kolkhozes and sovkhozes according to established procurement prices. Here it should be especially emphasized that existing procurement prices apply to batches of grain and oil-bearing crops which meet minimum quality standards. If quality indicators for grain and oil-bearing crops in grain reception enterprises diverge from base standards with regard to moisture content and admixtures there is a natural increase in physical weight at the rate of 1 percent for each percent of moisture and admixtures below base standards and natural deductions from physical weight at the same rate for moisture and admixtures above base standards.

The physical weight of grain and oil-bearing seed (with the exception of ears of corn) that is increased or decreased according to the size of natural additions or deductions (in accordance with divergences from base standards for moisture and admixtures) is the account weight. This weight is reimbursed according to established procurement prices and is counted toward the fulfillment of the procurement plan and contractual agreements. Natural additions or deductions are calculated according to total divergence of quality in terms of moisture content and admixtures, and the precision of computations is up to 0.1 percent.

The account weight of ears of corn arriving at the grain reception enterprise is determined in the following order. First the physical weight of the corn grain is determined based on the physical weight of ears and on the percentage of actual output of kernels. Then the account weight of the kernels of corn is calculated on the basis of the physical weight of kernels minus the natural deduction or plus the natural addition in accordance with divergences of quality from base standards for moisture and rubbish contents.

For example, the physical weight of ears of corn is 100,000 kilograms, the actual output of grain is 76 percent, and the base standard for moisture is exceeded by 2.5 percent. Based on this, the physical weight of the kernels equals:

$$\frac{100,000 \times 76}{100} = 76,000$$

kilograms, and the weight of the natural deduction in the grain equals

$$\frac{76,000 \times 2.5}{100} = 1,900$$

kilograms and the account weight of corn kernels will equal 74,100 kilograms (76,000-1,900).

In addition to natural deductions for the sale by enterprises of grain and oil-bearing seed (except the castor oil plant) with a higher level of moisture and rubbish than stipulated by the base standard, monetary payments are exacted from enterprises in the following amounts for drying and cleaning: for drying--for each percent of moisture above the base standard 0.4 percent of the full price for the grain at base condition (without a consideration of monetary additions or deductions for divergences in quality indicators); for cleaning--for every percent of rubbish above base standards 0.3 percent of the full price of grain at base condition (without a consideration of monetary additions or deductions). Monetary payments for drying and cleaning grain and oil-bearing seed are exacted on the basis of the physical weight of delivered batches.

Monetary payments to dry and clean ears of corn are exacted on the basis of the physical weight of corn kernels as determined by the actual yield of kernels and based on established prices for corn kernels. Payments for drying and cleaning the grain of strong and durum wheats and the more qualitatively-valuable varieties of grain crops are based on the elevated procurement prices that have been established to pay for these crops and varieties. Payments for drying and cleaning natural mixtures of grains are levied on the basis of prices according to which the given grain mixture is paid for. Payments for drying and cleaning sunflower varieties with a high oil content are levied on the basis of the established procurement price for sunflowers without adding to it a monetary addition of 5 or 12 percent that is paid out.

The calculation of the size of monetary payments for drying and cleaning is carried out in steps with an accuracy of up to 0.1 percent. Indicators of size expressed to the hundredths of a percent are rounded off in the established order.

For example, if the moisture content of grain or oil-bearing seed surpasses base levels by 4.4 percent and admixtures--by 3.8 percent, the monetary payment will be: for drying $0.4 \times 4.4 = 1.76$ percent (rounded off to 1.8); for cleaning $0.3 \times 3.8 = 1.14$ percent (rounded off to 1.1) of the full procurement price. Rounded-off indicators of payment sizes for drying and cleaning are summarized and the sum total of payments for drying and cleaning grain or oil-bearing seed is calculated.

If there are divergences from the base standard in terms of other attributes of quality (outside of moisture content and admixtures), in accounts with grain suppliers there are either monetary additions to the procurement price (at the rate of 0.1 percent for every 10 grams of weight of wheat, rye, barley and oats seed above base standards) or monetary deductions at the following rate: for every 10 grams of grain weight below base levels for wheat, rye, barley and oats--0.1 percent, for every percent of non-full value or damaged seed or grain (classified according to standards as grain or oil-yielding admixture) above base level--0.1 percent and for infestation of grain with mites--0.5 percent of the price. For durum wheat of the first, second and third classes and barley of the brewing varieties meeting GOST 5060-67 standards monetary additions or deductions for weight are not made.

Indicators for deviation of grain unit weight from base levels of less than 5 grams are discounted but of five and more are counted as a full 10 grams.

For example, two batches of wheat are received--one with a unit weight of 774 grams, the other--745 grams as compared to the base unit weight of 760 grams. In the first batch the deviation from the base level equals 14 grams (774-760) and the monetary addition must be calculated on the basis of 10 grams, i.e. at a rate of 0.1 percent of the price. In the second batch the deviation from the base level is 15 grams (760-745) and the monetary deduction must be calculated on the basis of 20 grams--at a rate of 0.2 percent of the price.

In determining the size of the monetary deduction for grain and oil-yielding admixtures actual quality indicators are rounded off in the following way: admixtures of less than 0.5 percent are discounted, those of 0.5 percent and more are counted as 1 percent. Grain infestation with mites is established by the laboratory of the grain reception enterprise for each batch individually, and deductions for infestation are made not for the entire quantity of grain received from the enterprise and included in invoice records but only from the cost of the grain that is mite-infested. Monetary additions and deductions are made for the entire batch of grain or oil-bearing seed as related to deviations in quality from established standards (base) of weight, grain (oil-yielding) admixtures and mite-infestation of grain.

For the reception of wheat with a unit weight of less than 650 grams (to 600) monetary deductions from the price are made at a rate of 15 percent, and for a weight of less than 600 grams--30 percent. These deductions are made only if unit weight is depressed as a result of the content of underdeveloped, frost cracked, puny seed or seed infested with mites or shield bugs (conclusions concerning the application of the deduction are presented by the director of the industrial production laboratory of the grain-reception enterprise). If 15 percent and 30 percent deductions are not utilized for decreased unit weight, deductions are made for low unit weight as compared to the base level at a rate of 0.1 percent of price for every 10 grams.

For the reception of rye with a unit weight of less than 600 grams (to 550) monetary deductions are made from price at a rate of 15 percent, and for a unit weight of less than 550 grams--30 percent. Such deductions are made for rye grain that is not of full value. If rye grain is full value but is low

in unit weight (below 600 grams) as a result of high moisture or rubbish content, deductions are made for decreased weight as compared to base levels at a rate of 0.1 percent of price for every 10 grams below base. In utilizing 15 percent and 30 percent deductions for low unit weight of wheat and rye, deductions from price for every 10 grams of weight below base level as well as for grain admixtures are not made.

Using specific examples (see table) let us examine the aforementioned order for determining account weights of grain and oil-bearing seed and their cost, deductions and additions for deviations from actual quality of grain and oil-bearing seed at base levels, and calculations of payments for drying and cleaning.

Durum wheat grain meeting standard requirements is reimbursed according to a procurement price that surpasses the price for soft wheat in the following sizes: for first class durum wheat--by 100 percent, second class--70 percent and third class--20 percent. Procured durum wheat must meet minimum standards for moisture content, rubbish and grain admixtures and infestation with grain pests. Durum wheat grain that does not meet third class quality standards is reimbursed according to a price that exceeds that of soft wheat by 10 percent in those oblasts, krays and republics which have been assigned quotas for the procurement of durum wheat grain.

Wheat that does not meet third class requirements with regard to the content of grain from other types of wheat (over 15 percent) is considered a mixture of types, is not classified as durum wheat and is reimbursed according to soft wheat prices. Calculations for durum wheat grain are made on the basis of minimal standards with the use of established additions, deductions and payment levies for drying and cleaning. For durum wheat grain that does not meet requirements for third class, monetary additions and deductions according to unit weight are utilized on the basis of actual unit weight and base condition for durum wheat in accordance with the order that is in effect for soft wheats. Additions and deductions for unit weight are not utilized for durum wheat grain of the first, second and third classes.

In receiving non-classified durum wheat grain with underdeveloped, frost cracked or puny seed as well as seed infested with mites-shield bugs with a unit weight below 650 grams (to 600) monetary deductions are made at a rate of 15 percent, and with a unit weight below 600 grams--30 percent. These deductions are made from the price that exceeds that for soft wheat by 10 percent in those oblasts, krays and republics which have been assigned quotas for the procurement of durum wheat grain.

Lists of strong wheat varieties are confirmed annually by the USSR Ministry of Agriculture and the USSR Ministry of Procurement. Wheat grain of strong varieties delivered to grain reception stations is accompanied by documents attesting to the variety and filled out in the established order. Strong wheat grain meeting established requirements is reimbursed according to a procurement price that exceeds the price for soft wheat in the following sizes: with a gluten content of the first group of 32 percent and more--by 50 percent, and with a gluten content of the first group of 28-31 percent--by 30 percent.

Grain that does not meet one or several criteria, including decolorization, but containing no less than 25 percent gluten of no lower than the second group and meeting all other requirements for quality at a minimal level is reimbursed at a price that exceeds the price for soft wheat by 10 percent. These requirements for a payment with the 10-percent addition is extended to include strong wheat varieties of subtypes 4 and 5 belonging to types 1 and 2 as well as subtype 2 belonging to type 3.

Strong wheat varieties that do not meet the criteria for quality needed for reimbursement at a rate of 10 percent over the price for soft wheat (i.e. content of less than 25 percent gluten, or gluten belonging to the third group, or a mixture of types) are reimbursed according to the price for soft wheat. If the councils of ministers of union republics allow, within the limits of their rights, the reception of grain with an increased moisture and rubbish content, the permission is extended to include the grain of durum and strong wheats with reimbursement for them in accordance with the aforementioned requirements.

With the goal of successfully fulfilling state plans for the production and procurement of durum and strong wheat varieties, the USSR Ministry of Procurement has recommended to the procurement ministries of union republics that they provide bonuses to workers of grain reception and grain processing enterprises directly involved in the organization of procurement of quality durum wheat and strong wheat varieties for fulfilling procurement quotas for the aforementioned wheats as stipulated in contractual agreements in a size equivalent to up to 1 month's salary and up to 0.5 percent of official salaries for every percent that the quota is overfulfilled under conditions in which all received grain is preserved.

The list of workers receiving bonuses and the specific size of bonuses are determined by higher organizations with a consideration of procurement plans and are provided to enterprises prior to the beginning of procurement. It is recommended that the list of administrative workers receiving bonuses include the director, the senior engineer, the deputy director and the director of the PTL [Expansion unknown] (OTK) [Department of Technical Control]. Conditions for providing bonuses to other workers are confirmed by the director of the enterprise in agreement with the local trade union committee. The payment of bonuses is made from funds of material incentives earmarked for paying out one-time bonuses for the fulfillment of especially important tasks.

Let us look in greater detail at the conditions for reimbursing brewing barley, grain of the qualitatively most valuable varieties and sunflower varieties with a high oil content. Lists of varieties of brewing barley, grain of the qualitatively most valuable varieties and sunflower varieties with a high oil content are confirmed by the USSR Ministry of Agriculture and the USSR Ministry of Procurement, and brewing barley is additionally confirmed by the USSR Ministry of the Food Industry. The aforementioned grain and sunflowers delivered to grain reception enterprises are accompanied by documentation asserting quality filled out on the basis of approval certificates or registration certificates for quality crops.

Brewing barley procured in zones established by GOST 5060-67 and meeting the quality criteria of this standard is reimbursed during procurement according to established procurement prices; that which is procured in zones not included in this GOST--according to the price established for feed barley. The reception of brewing barley with deviations from minimum standards is carried out as an exception with the special permission of the USSR Ministry of Procurement. Barley of brewing varieties that does not meet one or several criteria (including moisture and rubbish content) for minimum standards according to GOST 5060-67 is reimbursed according to procurement prices for feed barley. With the sale by kolkhozes and sovkhozes of brewing barley meeting quality requirements of GOST 5060-67, or deviating from the established minimum quality level, natural and monetary deductions and additions as well as payments for drying and cleaning are made on the basis of the procurement prices paid for this barley. Monetary deductions and additions for the unit weight indicator are not utilized.

Grain of the most qualitatively-valuable grain crops of wheat, barley, spring crops, buckwheat, rice, peas, lentils and beans are reimbursed at 10 percent above the procurement price for regular grain of the given crop, and millet of the most valuable varieties is reimbursed everywhere at 200 rubles per ton (as compared with the price of 150 rubles for regular millet). Wheat of the more valuable varieties is reimbursed at 10 percent above the price for soft wheat if the grain has a normal coloration and odor and contains at least 25 percent gluten of no lower than the second group.

Spring barley of the most valuable varieties is reimbursed at 10 percent above the price for feed barley if the grain has a normal coloration and odor and if its unit weight is no lower than 585 grams per liter.

Buckwheat and rice of the most valuable varieties are reimbursed at 10 percent above the prices for regular buckwheat and rice if the grain has a normal coloration and odor and if no more than 4 percent of the grain is crushed in a grain mixture and no more than 0.5 percent is damaged in rubbish admixtures (additionally, in rice--no more than 2 percent ortolan).

Peas of the most valuable varieties are reimbursed at 10 percent above the price for regular peas if the seed is normal in coloration and odor and if green peas contain no more than 2 percent of an admixture of yellow peas and yellow peas--no more than 2 percent of an admixture of green peas. No more than 1 percent of an admixture of feed (gray) peas is allowed in yellow or green peas. The content of grain damaged by spontaneous heating up, drying, rotting or germination classified with rubbish and grain admixtures, as well as peas damaged by brukhus [Translation unknown] should not exceed 1 percent.

Grain of the most valuable varieties of millet must have no more than 6 percent damaged and germinated seed in grain admixtures, including no more than 1 percent germinated seed, and in rubbish admixtures--no more than 0.5 percent damaged grain and 1.5 percent weeds that are difficult to separate; the admixture of poisonous weeds--trikhodesma inkanum [Translation unknown] and downy fruit heliotrope--is not allowed. For all other indicators of quality grain of the most valuable varieties must not be inferior to minimal standards.

Order for Reimbursing Grain

Line No.	Indicators	Soft wheat	Feed barley	Sunflowers
1. Determining Account Weight				
1	Physical weight, kg	150,000	120,000	80,000
2	Moisture content, %			
	base	14.0	14.0	12.0
	actual	16.7	13.4	13.8
3	Weed admixtures, %			
	base	1.0	2.0	1.0
	actual	2.5	1.8	2.4
4	Divergence from base (sum total deviations for moisture and rubbish), %	-4.2	+0.8	-3.2
5	Natural addition (+), deduction (-), kg	-6,300	+960	-7,560
6	Account weight (line 1+ or -line 5), kg	143,700	10960(*)	77,440
2. Determining Cost Price of Account Weight and Deductions and Additions for Quality				
7	Procurement price, rubles, per ton	105	100	230
8	Cost price of account weight (line 7 x line 6), rubles	15,088.50	12,096.00	17,811.20
9	Unit weight, grams/liter:			
	base	750	590	--
	actual	773	60(*)	--
10	Grain (oil-yielding) admixture, %			
	base	2.0	2.0	3.0
	actual	3.4	1.8	4.5
11	Infestation mite			
12	Percent of monetary additions (+), deductions (-) according to sum total deviations of actual quality from base	-0.4	+0.3	-0.2
13	Total monetary additions (+), deductions (-) (line 12 and line 8), rubles	-00.37	+36.29	-35.62
3. Determining Payments for Drying and Cleaning and Totals Subject to be Paid to the Enterprise				
14	Payment for drying (0.4 % for 1% moisture content in excess of the base level) and for cleaning (0.3 % for 1% rubbish)			
	% of price	1.3	--	1.1
	per 1 ton, rubles	1.68	--	2.53
	for total physical weight, rubles	252.00	--	202.40
15	Total monetary additions (+), deductions (-) & payments for drying and cleaning—rubles (line 13+line 14)	-312	+36.29	-238.02
16	Total of payments—rubles (line 8+ or - line 15)	14,776.14	12,132.29	17,573.18

The total indicated in line 16 increases by the cost of delivery of grain and oil-bearing seed via vehicles belonging to enterprises themselves.

(*) Sic. Numbers are shown as provided in text. Missprint possible.

Grain of the most valuable varieties of grain crops which does not meet one or several criteria for quality is reimbursed according to procurement prices for regular grain (without increases). If the councils of ministers of union republics allow the reception of grain with an increased moisture content and admixtures (with the exception of grain with admixtures that are difficult to separate out) this permission is extended to grain of the most qualitatively-valuable varieties with the maintenance of the increase in price above regular grain.

For sunflower seed of high oil-yield varieties of the superelite and elite types and of the first and second reproductions delivered by enterprises from approved and registered crop stands an addition is paid everywhere equalling 12 percent of procurement price. For seed of high oil-yield sunflower varieties of the third and fourth reproductions a supplement of 5 percent of procurement price is paid out only in oblasts, krays and republics that are earmarked annually for this by the USSR Ministry of Agriculture and USSR Ministry of Procurement with the agreement of councils of ministers of union republics.

If the councils of ministers of union republics allow the reception of sunflower seed with an increased moisture and rubbish content (with the exception of oil-bearing seed with harmful admixtures or those that are difficult to separate out) the aforementioned permission is extended to high oil-yield varieties of sunflowers. In such cases, monetary supplements to procurement prices are paid according to established amounts if the seed has a normal coloration and odor as well as if the quantity of damaged seed classified according to the standard in rubbish or oil-yielding admixtures is no greater than 15 percent of the total, including for rubbish admixtures--no more than 10 percent.

The conditions for reimbursing grain of the most qualitatively-valuable varieties of high oil-yield sunflowers with divergences from minimum standards with regard to the presence of rubbish admixtures that are difficult to separate out, to immaturity, to unusual odors, to smut (maran) and to common wormwood are set forth in the decisions of the USSR Ministry of Procurement related to the reception of such grain and oil-bearing seed.

In summary, it should be noted that kolkhozes and sovkhozes which supply the state with durum and strong wheats, with the most valuable varieties of grain crops and with high oil-yield sunflower varieties are annually paid monetary supplements to procurement prices equalling a sum total of about 0.5 million rubles. This type of significant supplement stimulates an increase in the production of high quality grain and oil-bearing seed and in their procurement for state resources.

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CSO: 1824/031

AGRO-ECONOMICS AND ORGANIZATION

STRENGTHENING COST ACCOUNTING IN SOVKHOZ ECONOMIC OPERATIONS

Moscow EKONOMICHESKAYA GAZETA in Russian No 39, Sep 84 p 12

Article by Sh. Mukhlisulin, head of the Department of Economics and Production Organization at the Kazakh Scientific Research Institute of Karakul Breeding: "To Adapt All of the Elements" /

Text During the all-union economic conference, mention was made of the need for decisively improving the work of the agroindustrial associations, raising the level of all economic work, introducing cost accounting and the collective contract into operations on an extensive scale and utilizing other economic levers. Conditions have now been created under which all of the sovkhozes, and also the kolkhozes, can carry out production operations based upon the principle of self-recovery. Importance is attached first of all to utilizing state assistance to maximum advantage, especially the bonuses added on to the purchase prices as introduced for backward farms.

Utilizing Economic Levers

Unfortunately, enterprises which quite often operate under the same conditions have very different indicators for production efficiency. For example, let us take two co-located karakul breeding sovkhozes: the Suzakskiy and Syzgan in Suzakskiy Rayon in Chimkent Oblast. Compared to the first farm, where an average of 36 kopecks of profit is earned for each ruble of production expenditure, on the second farm -- the figure is less by a factor of three. The chief reason for this lies in the fact that intra-organizational accounting and the collective contract have been introduced into operations at the Suzakskiy Sovkhoz, while at the neighboring farm very weak use is being made of these economic levers for raising production efficiency.

The mechanism of cost accounting stimulation must orient each enterprise towards achieving high final operational results. A weakening in the cost accounting procedures encourages parasitical tendencies and fails to promote the fulfillment of plans using one's own resources. In such instances, the agricultural enterprises often turn to the state for assistance and place their excessive hopes on state grants or raised prices.

Recently the financing of capital investments for production purposes at karakul breeding sovkhozes in Kazakhstan has been carried out exclusively by means of

the state budget. This has led to a weakening in the economic work and it has failed to create proper interest in the rational formation of fixed productive capital.

It was by no means an accident that the branch's output-capital ratio decreased by more than twofold over the past decade. Nor is the existing mechanism for utilizing profits at sovkhozes promoting a strengthening of the cost accounting procedures.

For example, last year the Zadarinskiy State Breeding Plant for the breeding of black karakul sheep earned 1,027 rubles worth of profit. Only 5 percent of the profit was left in the fund for strengthening and expanding the farm and almost 30 percent was placed in the ministry's reserve fund. A paradox developed: initially the farms release their funds and then subsequently they again receive them from the state budget. This not only complicates the financial work but in addition it fails to conform to the cost accounting principles. In addition, it lowers the responsibility of the collectives. The distribution of profits at sovkhozes should ideally be carried out in a manner such that they can carry out expanded reproduction to the maximum degree using their own resources and based upon the planned rates for production growth.

A few words now concerning planning. A trend is still being observed towards the undertaking of relaxed plans, with these plans being coordinated only weakly with the production resources. Thus, over the past 5 years, an average of 119 lambs have been obtained per 100 ewes at karakul breeding sovkhozes in Kazakhstan. But in view of the fact that the plans called for an average of 103 lambs, this led to an increase in the additional payments and bonuses, with no growth taking place in the production of products or in labor productivity.

The practice of awarding bonuses to farm leaders and specialists for exceeding the production levels for past years, in our opinion, by no means always interests one in achieving even the average indicators of past years, especially during unfavorable years. The reduced yields being obtained from the fields this year and also the lowered livestock productivity are creating a lower level for subsequent years and this will serve as the basis for obtaining large bonuses in the future.

Moreover, stimulation is carried out regardless of the factors which led to an increase in output or profit. For example, under the conditions imposed by the accepted principle of stimulation, those farms which earlier did not use their own resources sufficiently can achieve accelerated rates of growth with less effort and thus undeservedly obtain higher bonuses than those kolkhozes and sovkhozes which utilized their resources to the maximum possible degree during the last five-year plan. There will be fewer stimuli for the latter farms.

What Should Be the Basis for Issuing Incentives To a Farm?

It is our opinion that incentives should be issued to agricultural enterprises based not upon the average annual level achieved over a period of 5 years, but rather based upon maximum use by a farm of its available and allocated production resources at the normative level. Under the conditions imposed by consistent intensification, an increase takes place in the role played by the

normative method for planning and evaluating the work of farms. It makes it possible to uncover more completely the unused reserves for production growth. Thus the normatives for growth in the production of goods per unit of functioning material, labor and land resources should ideally serve as the foundation for issuing incentives to agricultural enterprises.

The conversion over to the normative method for planning wages per ruble of gross output is especially deserving of attention. The absence of a normative base results in a situation wherein individual farms which operate under the same conditions have very diverse wage rates per ruble of gross output. Let us once again take the Suzakskiy Sovkhoz and also the Bairkumskiy Sovkhoz in Chimkent Oblast. The wage per manhour at these farms is at the same level. However, labor productivity at the first sovkhoz is 40 percent higher than at the second. It is for this reason that the wage per ruble of gross output at karakul breeding sovkhozes fluctuates from 33 to 57 kopecks.

As yet, not enough use is being made of the economic stimuli available for lowering production costs. This indicator is for some reason ignored when summing up the results of the socialist competition for agricultural enterprises. This does not orient the collectives towards achieving high final results with minimal expenditures of labor and resources. As a growth, continuing growth is noted in the production costs at many farms. It must be taken into account when issuing material incentives for labor.

We have examined only a few of the problems concerned with strengthening cost accounting principles in sovkhoz operations. The solutions for these problems will promote further improvements in the economic mechanism and an increase in the efficiency of agricultural production. And all workers attached to our institute must furnish effective assistance in carrying out this work.

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CSO: 1824/34

CURTAILING MANUAL LABOR IN KAZAKH AGRICULTURE

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 9, Sep 84 pp 42-47

Article by G. Kurmanov, deputy minister of agriculture for the Kazakh SSR and chairman of the Kazakh Republic Administration for the Scientific-Technical Society of Agriculture: "Reducing Manual Labor Expenditures in the Kazakh SSR"

Text During the 26th CPSU Congress, emphasis was placed upon the fact that Soviet society is a society of working people. Everything is being done to make the labor of man not only productive but also more meaningful, intensive and creative. Steady growth in labor productivity is an objective requirement and one that is conditioned by the economic laws of socialism and the attendant tasks concerned with satisfying more completely the increasing material and cultural requirements of the members of our socialist society.

In the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "On Improvements in Planning and Intensifying the Effect of the Economic Mechanism With Regard to Raising Production Efficiency and the Quality of Work," the need was also pointed out for carrying out all-round programs aimed at reducing manual labor and raising labor productivity based upon the mechanization and automation of production processes.

For agriculture in the Kazakh SSR, which is characterized by tremendous scales of production and a relatively low level of support in the form of labor resources, improvements in labor productivity and a sharp reduction in manual labor expenditures are of considerable importance.

The republic has been transformed into a large grain area and animal husbandry base as a result of the development of the virgin and long-fallow lands, the glorious 30th anniversary of which was recently celebrated by the entire country. Over a brief interval of time, more than 25 million hectares of unused land were developed. Today the republic annually produces the same quantity of grain as was produced 30 years ago by the country as a whole; the average annual volume of grain sales has increased by a factor of 10. The past 3 years of the 11th Five-Year Plan were extremely difficult ones for the republic's farmers and yet despite the fact that entire oblasts were subjected to drought conditions and endured substantial losses, the average annual production of grain amounted to 22.2 million tons. This was the 8th time that the country had obtained 1 billion or more poods of grain from Kazakhstan.

The republic's feed base for animal husbandry has become stronger based upon improved cropping power and this has made it possible to increase the number of animals and to raise the productivity of the branch. Over the past 30 years, the number of cattle and sheep has increased twofold, hogs -- by a factor of 6, livestock and poultry purchases -- by 4.3, milk -- by 4.7, wool -- by 3.8 and eggs -- by a factor of 51. Today Kazakhstan occupies second place in the country in the production volume for wool, third -- for meat and eggs and fourth -- for milk production.

The republic's rural population constitutes slightly more than 6 percent of the country's overall rural population and yet its agricultural workers are producing one fifth of the entire volume of grain, one fourth of the mutton, almost one fourth of the wool and one third of all of the karakul pelts being obtained throughout the USSR as a whole. The economic potential of the virgin lands is tremendous. It will continue to increase and must play a great role in the carrying out of the Food Program.

At the present time, Kazakhstan agriculture numbers more than 2,500 sovkhozes and kolkhozes, all of which have modern equipment at their disposal. The power engineering capabilities of the branch have increased from 29.8 million horsepower in 1965 to 64.1 million horsepower in 1982. This made it possible to raise the power-worker ratio by more than twofold and to raise its level to 44.1 horsepower per average annual worker. The capability of the tractor pool increased during this period by 21 percent. However, despite this fact the proportion of manual labor with regard to its overall expenditures by branches of the agroindustrial complex is decreasing slowly and a considerable difference still exists in the mechanization levels for the principal and auxiliary operations. The proportion of manual labor in vegetable production, potato production, cotton production, horticulture, viniculture and a number of other branches is high. The rates of growth for labor productivity on livestock farms are low: here almost two thirds of all of the work is carried out manually. According to data available for the various types of work, almost 48 percent of those presently engaged in agricultural production are performing manual labor. In aquicultural construction, more than one half of the construction and subsidiary operations, and at enterprises of Goskomsel'khoztekhnika for the Kazakh SSR, more than 47 percent of all operations are being carried out manually.

Considerable volumes of manual labor tend to hold back improvements in the efficiency of agricultural production, growth in its productivity and reductions in the production costs. Thus the problem concerned with lowering these costs and raising labor productivity is becoming increasingly urgent.

The movement to raise labor productivity in a steady manner involves the participation of 2,918 primary organizations of the republic's NTO /scientific-technical society/, which numbers 102,000 scientists, specialists and other agricultural workers.

The Kazakh Administration for the NTO for agriculture is participating in the development and introduction of an all-round program for the mechanization and automation of the work processes in this branch, in the interest of reducing unproductive manual labor expenditures to the maximum possible degree and in the

introduction of industrial technologies for the production of agricultural products, that is, in the implementation of all measures planned in conformity with the requirements of the all-union competition for the best introduction of scientific achievements and leading experience in agriculture. Competitions aimed at reducing the use of manual labor are being held in all areas throughout the republic. In 1983 alone, 530 conferences were held on problems concerned with the all-round mechanization of work processes in agriculture. These problems were studied in connection with 600 courses and seminars.

The republic administration for the NTO for agriculture, during one of its regular sessions, examined the question concerning the work of organizing reductions in the use of manual labor at the kolkhozes and sovkhozes and introducing industrial technologies into operations. The plenum approved the measures which were advanced. Their implementation is producing positive results. Thus, in Aktyubinsk Oblast, during 3 years of the 11th Five-Year Plan, reductions in the use of manual labor served to release for other types of work 656 tractor-machine operators and also kolkhoz and sovkhoz workers who earlier were engaged in carrying out manual work in field crop husbandry, animal husbandry and in repair workshops. Moreover the economic savings realized from the reductions in manual labor amounted to more than 98,000 rubles and from the carrying out of organizational-economic measures -- almost 3 million rubles.

Definite successes were also achieved in this regard on farms in other oblasts of the republic. Included among the leading farms are the sovkhozes Derzhavinskiy in Turgay Oblast, Rassvet, Astrakhanskiy and imeni Kuybyshev in North Kazakhstan Oblast, Krasnoyarskiy in Tselinograd Oblast and so forth.

During 3 years of this current five-year plan, the proportion of manual labor expenditures in sheep raising decreased by 38 percent in Turgay Oblast. Such operations as soil preparation, sowing, planting of seedlings and the planting of potatoes have been mechanized completely here. The use of a seedling planting machine at the specialized vegetable growing Derzhavinskiy Sovkhoz is making it possible to realize an annual savings of up to 1,250 man-days, or a reduction in labor expenditures of a factor of six compared to the carrying out of this work manually.

In North Kazakhstan Oblast, more than 2,000 individuals were released from having to perform manual labor as a result of the introduction of technical innovations, rationalization proposals and new equipment in agriculture, based upon initiative displayed by NTO organizations. For example, the pre-sowing processing of potatoes and the loading of the tubers into potato planters were completely mechanized at the Rassvet Sovkhoz in Bishkulskiy Rayon based upon the use of a number of mechanisms. A potato washing and sorting point was established here, thus making it possible, during the tense period of spring work, to release up to 40 workers from having to perform manual labor. Today such points are to be found on each potato growing farm. The average annual savings realized from their use, for the oblast as a whole, amounts to approximately 0.5 million rubles.

The creation on the farms of triple-section potato sorting points is also playing an important role in reducing manual labor expenditures. In North Kazakhstan Oblast, such a point was built for the very first time at the Astrakhanskiy Sovkhoz in Sovetskiy Rayon, where up to 50 workers were released

from having to perform manual labor when this point was placed in operation. The economic savings amounted to more than 100,000 rubles annually. For the oblast as a whole and during 3 years of the 11th Five-Year Plan, more than 300 individuals were released for other types of mechanized operations as a result of the placing in operation of the mentioned points. The construction of these points is continuing at the present time.

At the Zarechnyy Sovkhoz in Leninskiy Rayon in this same oblast, based upon a recommendation by farm specialists that was approved by the council of the NTO's primary organization, a portion of the PRT-16 manure spreaders were re-equipped to serve as loaders and this made it possible, during the sowing campaign, to release seven workers from having to load tubers into the potato planters manually. The economic savings amounted to 22,000 rubles annually.

Each machine operator is aware of the amount of manual labor that is required in order to prepare equipment for storage. In the interest of reducing the amount of such labor at the Sovkhoz imeni Kuybyshev in Bishkul'skiy Rayon, a unit was developed and placed in operation for applying anti-corrosive protective coatings to the working organs of machines and to rubber parts.

The NTO organizations, jointly with the professional trade union committees, are directing the creative efforts of the agricultural specialists towards the further development of progressive technologies and the introduction of scientific-technical achievements into agricultural production. They have mobilized the efforts of the local experts for the purpose of introducing complete mechanization for the supplying of sowing units with seed and fertilizers, improving the hay harvesting technology using grain combines the service life of which has already expired and achieving a considerable reduction in manual and unproductive labor in the growing of labor-intensive crops and also when carrying out many production processes in animal husbandry.

The republic and oblast NTO administrations have participated actively in the development of methodological recommendations and in the preparation and implementation of all-round programs for reducing manual labor expenditures in agriculture during the 1986-1990 period and for the period up to the year 2000. Towards this end, special committees consisting of the chief specialists and representatives of social organizations and headed by farm leaders have been created at a majority of the republic's kolkhozes and sovkhozes. The committees analyze the situation with regard to the mechanization of labor, they develop all-round programs for reducing manual labor expenditures and they implement measures directed towards introducing new equipment and leading technologies, improving the organization of labor and improving the skills of the workers. The introduction of a passport system for manual labor has been carried out and methods have been outlined for reducing this labor such that the proportion of workers performing manual labor in the branch will have decreased to 18.2 percent by the end of the current five-year plan.

Deserving of mention is the positive experience accumulated in this regard by the council of the primary organization of the NTO for the Kazsel'khoz-mekhanizatsiya Scientific-Production Association. Based upon initiative displayed by this organization, 73 farms of a definite specialization and considered to be typical of the zone were selected for inclusion in the

association (from among all 19 of the republic's oblasts). Specific types of manual labor were defined for each one of them and specific methods were outlined for reducing this labor. The material and monetary resources required were taken into account and measures were outlined for improving the skills of those workers released from having to perform manual labor. The imposing of certain parameters on all of the sovkhozes and kolkhozes in the republic, taking into account their size and specialization, has made it possible to develop in a more sound manner specific programs for the development of each farm. These programs are directed towards solving the more important social problems in the rural areas.

A great amount of work is being carried out by the primary organizations of NTO's of institutes and experimental stations. The subject programs for these scientific institutes include the development of and improvements in machine technologies and systems for the all-round mechanization of production and energy-conserving, soil protective and industrial technologies for the cultivation of agricultural crops. A collective of scientists at the Kazakh Scientific Research Institute of Farming has directed the development of industrial technologies and the basis principles for obtaining programmed yields. This year the farms are employing such technologies on an area of 0.5 million hectares. Jointly with the oblast experimental stations, the institutes are improving the zonal technologies for grain production. In short, the scientific resources in all areas have been mobilized for the purpose of implementing the special purpose all-round program for reducing manual labor expenditures in all branches of the republic's APK /agroindustrial complex/. This is producing positive results. A steady increase is taking place in the level of mechanization of production processes in agriculture. For example, the issuing of water on cattle farms has been mechanized 81 percent, the issuing of feed -- 75 percent, the removal of farmyard manure from facilities -- 67 percent and on hog raising farms these operations have been mechanized by 91, 94 and 95 percent respectively. On cattle farms, 69 percent of all operations have been completely mechanized and on hog raising farms -- 94 percent. The technological processes for the milking of cows and the clipping of sheep have been mechanized completely.

The use of new and more improved machines and equipment is making it possible to mechanize not only individual operations but even an entire technological process and to make it industrial in nature. Those kolkhozes and sovkhozes which introduced industrial technologies for the production of field crop husbandry products have achieved complete mechanization for all of the technological processes associated with the cultivation and harvesting of grain crops and annual grasses.

Industrial technologies introduced into operations in field crop husbandry are intended for the development of programmed agricultural crop yields. For example, the technology for obtaining the maximum possible corn grain yield consists of the following: the spring levelling off of an autumn plowed field using a toothless drag harrow, an application of fertilizer in an amount which will ensure the planned yield, pre-sowing treatment of the soil with herbicides using a heavy disk harrow for placing the herbicides, pre-sowing cultivation and the sowing of seed for highly productive hybrids using SPCh-6 and SUPN-8 sowing units. Subsequently, throughout the entire growing season and right up until harvesting the crop, no work will be carried out on the fields with the exception of waterings.

They began developing this technology in Kazakhstan in 1979 based upon initiative displayed by the council of the primary organization of the NTO for the 40 Let Oktyabrya Kolkhoz in Panfilovskiy Rayon in Taldy-Kurgan Oblast. At that time, the technology was employed throughout the republic as a whole for cultivating grain corn on only 15,000 hectares and in 1983 -- on 50,000 hectares.

This year the republic's kolkhozes and sovkhozes are using industrial technologies for cultivating other crops -- corn for silage -- on 100,000 hectares, soybeans -- on 15,000, cotton -- on 50,000, sunflowers -- on 33,000, sugar beets -- on 20,000 and tobacco and vegetable crops -- on 800 hectares. The overall area on which industrial technologies are being employed for obtaining programmed yields is 515,000 hectares.

The council of the primary organization of the NTO for the Kazsel'khoz-mekhanizatsiya Scientific Production Association constantly monitors the basically new technology that was developed here for the harvesting of grain crops, the essence of which consists of a harvester cutting down the grain bulk after which it is transported to the edge of the field for subsequent threshing at a permanent station. For example, when this technology is employed for the harvesting of rice, an average of one less worker is required to perform manual labor for every 8 hectares of harvested area. The use of the new technology for harvesting grain crops is making it possible to reduce labor expenditures considerably, including manual labor.

In 1983, those kolkhozes and sovkhozes which had introduced industrial technologies for the cultivation of agricultural crops, together with elements of programmed yields, obtained more output from each hectare of a particular crop than was obtained when use was made of the conventional technology: raw cotton -- by 6-17 quintals, sunflower seed -- by 5.8, grain corn -- by 9.7 and sugar beets -- by 30 quintals.

A high yield of grain corn, cultivated on the basis of the industrial technology, was obtained at the above-mentioned 40 Let Oktyabrya Kolkhoz in Panfilovskiy Rayon in Taldy-Kurgan Oblast. Here, on tracts where the new technology was employed, each hectare produced 75 quintals and on those tracts where the conventional technology was used -- only 54.5 quintals per hectare.

At the Maydantal Sovkhoz in Turkestanskiy Rayon in Chimkent Oblast, the grain corn yield obtained from each of 500 hectares amounted to 77.6 quintals. The operational experience of the council of the primary organization of the NTO of this sovkhoz was summarized and disseminated on an extensive scale by the Chimkent Oblast Administration of the NTO for agriculture.

The councils of primary organizations of NTO's for many kolkhozes and sovkhozes throughout the republic are constantly searching for reserves for reducing labor expenditures per unit of output and particularly manual labor expenditures.

The industrial technology is used for the growing of hybrid corn seed. Distinct from the conventional technology, it calls for the sowing of maternal and parental forms in a drill row ratio that is a multiple of the passing of a

Khersonets 200 corn harvesting combine. In 1983, eight farms in Panfilovskiy Rayon in Taldy-Kurgan Oblast sowed corn for seed with a ratio for the number of drill rows of maternal and paternal forms that was not the usual 4:2 but rather 6:2, 18:6 and in conformity with other systems. This made it possible for them to produce 140,000 tons of seed instead of 128,000 tons as called for in the plan and to realize a profit in excess of 3.5 million rubles from the sale of this seed.

The industrial technology for the cultivation of sugar beets calls for the complete mechanization of all work processes. Its principal elements -- sowings carried out following the best predecessor crop arrangements, very thorough preparation of the soil, applications of organic and mineral fertilizers in amounts sufficient for obtaining the planned yields, precision sowing of single-shoot seed of the more productive varieties and hybrids in order to avoid having to thin out the plants in the rows and the use of herbicides (Phenazine, Eptam, Venzar, Ronite) for destroying weeds. This work is carried out using a complex of machines -- sowing machines, cultivator-plant feeders, fertilizer distributors, automatic thinners and so forth. The tending of the crops includes thinning out work, loosening of the inter-row spacings and combating pests. The harvesting work is carried out on a flow line basis using haulm harvesting, root crop harvesting and other items of equipment.

Experience has shown that the industrial technology is most effective when there is close collaboration between the beet growers and workers attached to the sugar industry. Thus, in the beet growing regions of the republic more extensive use is being made by the plants of the sugar beet method which does not include preliminary manual cleaning of the beets on the farms.

The introduction into operations at kolkhozes and sovkhozes of the industrial technology for sunflower seed production is producing fine results. The initiative in this regard was displayed by the councils of the primary organizations of the NTO for Glubokovskiy Rayon in East Kazakhstan Oblast. In 1983, for the rayon as a whole, a seed yield for this crop of 24.8 quintals was obtained from each of 4,200 hectares of sowing, or 6.2 quintals per hectare more than when use was made of the conventional technology. At a number of sovkhozes in the oblast, the increase in yield was even greater: at the imeni Lenin Sovkhoz in Bolshenarymskiy Rayon -- 9.2 quintals per hectare, at the imeni 50-Letiya Kazakhskoy SSR in Glubokovskiy Rayon -- 8.9 and at the Berezovskiy Sovkhoz in Zyryanovskiy Rayon -- 10.9 quintals per hectare.

In accordance with a recommendation by the council of the primary organization of the NTO, an industrial technology for soybean cultivation was introduced into operations at the Order of Lenin Alma-Atinskiy Sovkhoz in Talgarskiy Rayon in Alma-Ata Oblast. As a result, 22 quintals of seed were obtained from each of 250 hectares sown in soybeans here and by the team headed by Comrade Lukashev -- 30 quintals from each of 84 hectares. Active work by the members of the primary organizations of NTO's is promoting annual yields of 20-21 quintals of soybean seed from each hectare of planting at the Kolkhoz imeni Lenin in Enbekshikazakhskiy Rayon in Alma-Ata Oblast, at the Sovkhoz imeni Krupskaya in Taldy-Kurgan Oblast and on a number of other farms.

In recent years the NTO organizations, jointly with the agricultural organs, have accomplished a great deal in organizing potato production throughout the republic in the interest of ensuring that the population has an ample supply using its own resources, thus precluding the need for importing potatoes from

other regions of the country. Towards this end, farm specialization in the production of this crop has been carried out in the more favorable soil-climatic zones. An industrial technology has been recommended and is being introduced into operations for the production of potatoes, which calls for the use of special crop rotation plans involving a maximum saturation of sowings of the principal crop and the complete mechanization of all processes associated with the cultivation, harvesting, storage and preparation of seed. The results realized from the introduction of this progressive technology at such leading farms as the Kotyrkol'skiy Sovkhoz-Technical School in Kokchetav Oblast and the Aleksandrovskiy Sovkhoz in Kustanay Oblast and also on individual farms in Karaganda Oblast, convincingly reveal the advantages of this technology compared to the conventional one, as expressed in the raised cropping power for the potatoes, the increase in the gross yields of tubers and the reductions in expenditures of labor and material-monetary resources.

It bears mentioning that more extensive use of the industrial technologies for growing potatoes is being held up by a shortage of highly effective herbicides, special machines and by a number of other factors which are not dependent upon the production workers. However, full use is not being made of the available opportunities in the various areas. This is clearly borne out by the different operational results being achieved by farms which operate under the same natural-economic conditions, that is, with the same production potential. For example, of 10 farms in Alma-Ata Oblast which grow grain corn using a progressive technology, four obtained grain yields which were lower than 38 quintals and on three farms -- even less than 30 quintals per hectare, despite the fact that they were supplied to an equal degree with herbicides, mineral fertilizers and seed. In this regard the republic, oblast and rayon NTO administrations are continuing their work aimed at raising the efficiency of farming, eliminating the great differences in yields and raising backward farms and their production subunits to the level of average and leading farms.

Manual labor expenditures in animal husbandry are declining throughout the republic. This is being promoted by the introduction of industrial technologies and the creation of large modern complexes. At the present time, there are 104 livestock complexes in operation in the republic, including 75 for milk production, 47 for the products obtained from sheep raising, 18 for pork production and 8 for beef production. These complexes are producing 28 percent of all of the mutton, 98 percent of all of the eggs and 100 percent of all of the poultry meat being produced in the republic's public sector.

Experience has shown that the average annual milk yield per cow at dairy complexes is higher by roughly 250 kilograms than the average for the republic. The weight increases for cattle and hogs and labor productivity are higher at the complexes, the quality of the products is better and feed consumption per head of cattle or poultry is lower.

At one time the presidium of the republic's NTO administration examined the operational experience of the council of the primary organization for the NTO of the Dzhetygensk complex for the maturing and fattening of 10,000 head of young cattle stock annually. An all-union conference was held here in 1982 for the purpose of exchanging experience in the fattening of cattle. Each year the complex sells more than 10,000 head of young stock to the state, at the age of

13 months and at an average live weight per head of approximately 430 kilograms, with the animals being mainly in a high state of nourishment. The average daily increase in live weight per animal is 950 grams or more and the production profitability level exceeds 51 percent.

Deserving of attention is the operational experience of the council of the primary organization of the NTO for the Volynsk complex for the fattening of 108,000 hogs annually (Karaganda Oblast). Here the average daily increase in live weight per head is higher by a factor of 1.5 and feed consumption per unit of output is less by a factor of 2 than the figures for conventional farms of sovkhozes. The sows are utilized on an intensive basis. For example, the output of young pigs per sow is greater by a factor of 1.5 and this lowers considerably the maintenance costs for the principal herd. The period for raising one head of young stock at the complex is one third less, the amount of pork produced per head is greater by a factor of 1.7-2 and labor productivity is higher by a factor of 5 than the figures for conventional farms.

The councils of primary organizations of NTO's within the Goskomsel'khoztekhnika system for the Kazakh SSR are performing useful work in connection with reducing the amount of manual labor. Its repair enterprises are introducing flow line and mechanized lines and they are using new modern equipment and special rigging. One hundred and twenty five types of equipment, devices and rigging have been produced and introduced into production operations based upon 162 works carried out by the Central Design and Technological Bureau of the republic's Goskomsel'khoztekhnika. The overall economic effect realized from the introduction into operations of these items of equipment amounted to more than 523,000 rubles.

The examples cited underscore the great work carried out for the purpose of reducing the amount of manual labor being performed in agriculture in the Kazakh SSR. However, by no means has full use been made of all of the available reserves. The councils of the primary organizations of NTO's are not carrying out their roles in all areas; some of them are not displaying sufficient activity. In a number of areas, rationalization and inventive work have been organized in a very weak manner. The organizations of the republic's agricultural NTO's are directing their efforts towards eliminating these and other shortcomings. Here the chief task is that of further improving the system of planning and management for the process of reducing manual labor at the kolkhoz and sovkhoz level and in their production subunits and the mutual coordination of all work carried out in this regard by the NTO organizations and the agricultural organs of rayons and oblasts.

Computations reveal that the almost complete elimination of manual labor in agriculture throughout the republic, during the 12th Five-Year Plan, will make it possible to release approximately 600,000 workers representing 112 professions for the carrying out of mechanized operations.

The Kazakh Republic administration for the NTO for agriculture views its tasks as including active participation in the work of the committee for developing a passport system for manual labor, organizing and conducting competitions aimed at replacing manual labor with mechanized operations and implementing measures directed towards issuing material and moral incentives for the

introduction of technologies which eliminate manual labor. This will constitute a substantial contribution towards raising labor productivity in agriculture throughout the republic and successful implementing the country's Food Program.

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CSO: 1824/50

AGRO-ECONOMICS AND ORGANIZATION

POLICY ON BREAD COST, GRAIN PURCHASE PRICING EXPLAINED

Vilnius SOVETSKAYA LITVA in Russian 4 Oct 84 p 2

Article: "Bread -- Our Wealth"

Text The Editorial Board of the newspaper SOVETSKAYA LITVA has been receiving letters from readers containing requests from readers who wish to know exactly what comprises the purchases for grain and the cost to the state for bread production.

The response to this question is provided by the chief of the Statistical Administration for Agriculture of the USSR Central Statistical Administration L.I. Vashchukov, in material published in a publication entitled "Argumenty i fakty" Arguments and Facts.

Bread (in the sense of baked bread and baked goods) is a high quality and irreplaceable food product and as such it serves as the basis for the ration in an overwhelming majority of countries. Bread contains the chemical elements required by an organism, such as calcium, phosphorus and iron. It is assimilated well by the human organism and is readily digested. One kilogram of bread contains 2,000-3,500 calories and from it people obtain one half of the carbohydrates required by an organism, one third of the proteins and 50-60 percent of the Group B vitamins.

Even during years considered to be unfavorable from the standpoint of weather, our country possesses an ample supply of grain for the baking of bread.

Grain is a raw material for the baking of bread and baked goods and also for obtaining groats, macaroni products and mixed feed for animal husbandry.

The production cost for grain products is a reflection in monetary form of the expenses borne by enterprises for its production. The kolkhozes and sovkhozes, having a definite material base at their disposal, are constantly improving and modernizing it and this requires an increase in capital investments.

Following the March (1965) Plenum of the CPSU Central Committee, which adopted the program for agricultural development, the branch's logistical base was strengthened and the wages of agricultural workers were raised. The period

which has elapsed since the Plenum can be viewed as a stage for the accumulation of resources and material potential. The rates of growth for this potential were decisive and this brought about an increase in the production costs for many agricultural products, including grain.

The production costs for individual grain and pulse crops are dependent upon their structure and regional production peculiarities. For example, the production costs for grain on farms in Moldavia and the Ukraine are considerably lower than those on farms in Lithuania and Latvia. In addition to the grain crop structure and territorial distribution, the production cost level for grain is greatly influenced by the levels for agricultural equipment, labor productivity, mechanization of labor processes and so forth.

In order to stimulate the production of agricultural products at the kolkhozes and sovkhozes, the state is systematically raising the purchase prices for grain and establishing various types of bonuses, while at the same time the retail prices for products made from grain (bread, baked goods, macaroni products, groats and so forth) remain unchanged.

It bears mentioning that the purchase (price list) prices for grain are also differentiated by crops and by territory. For example, the price list in the central zone (Vladimir, Gorkiy, Ryazan, Perm and other oblasts) per ton of wheat, oats or barley is 140 rubles, millet -- 156 and rye -- 175 rubles. The price for a ton of wheat in Ulyanov Oblast is 109 rubles, oats and barley -- 100, millet -- 155 and rye -- 145 rubles. The price for a ton of rye changes from 95 rubles in the Moldavian SSR to more than 200 rubles in some zones in the Mordovian ASSR.

In addition, the state has established various types of bonuses for adding to the list price: for high grade durum and strong wheat -- high quality bonuses and commencing in 1983 -- bonuses added on to the prices for economically weak kolkhozes and sovkhozes. For example, a bonus of 100 percent is added on to the price for 1st grade wheat and for 2d grade -- a 70 percent bonus. For strong wheat with a gluten content of 32 percent or more, this bonus is 50 percent. For the sale of high quality grain, the bonus added on to the price -- up to 12 percent and so forth.

For the purpose of stimulating growth in the production and procurements of grain, a 50 percent bonus has been established for adding on to the price for goods sold over and above the average annual level for the preceding five-year plan.

As you can see, considerable funds are being expended for grain purchases at the kolkhozes and sovkhozes. In addition, the state is bearing a portion of the expenditures required for transporting storing and processing the grain. At the same time, the retail prices for bread, baked goods and macaroni products continue to remain low. In this regard, it can be stated that a careless attitude has developed among some people with regard to bread. All too willingly, uneaten fragments are discarded into a pail for waste food scraps or even rejected as trash. This constitutes unpardonable waste. It is apparent that if each one of us discarded 20 grams of bread daily, then over the course of a year's time such waste scraps would be the equivalent of

approximately 1.5 million tons of grain. Almost 400 trains consisting of 60-70 freight cars each would be needed for transporting such an amount. Certainly, one might justify this by stating that we pay for the grain and thus we cover the expenses. But this is not so. It can be seen from the above that the retail prices for grain do not cover the state's expenditures. Each time we purchase a normal loaf, a long loaf, a round loaf or a roll, we are in fact receiving a grant from the state in a sense and a considerable one at that.

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CSO: 1824/46

AGRO-ECONOMICS AND ORGANIZATION

GRAIN, MIXED FEED EXCHANGE REGULATION STIPULATIONS

Moscow ZAKUPKI SEL'SHOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 9, Sep 84 p 2

[Regulation attributed to USSR Ministry of Procurement "In Exchange for Mixed Feed"]

[Text] For the purpose of drawing additional wheat for human consumption into state grain reserves, by order No 200 of 17 July 1984 of the USSR Ministry of Procurement, grain-receiving enterprises are permitted to receive wheat for human consumption from kolkhozes, sovkhozes and other agricultural enterprises and organizations which have fulfilled established wheat sale plans to the state in 1984, including strong and most valuable quality as well as durum (by grade) wheat, to be exchanged for mixed feed and forage crop grain. The exchange is independent of fulfillment of sale plans for other grain crops.

In accordance with this order, the ministries of procurement of the union republics, state procurement inspectorates, grain products administrations and grain-receiving enterprises are obligated to take effective measures to fulfill the established plans of wheat procurement from the 1984 harvest, including strong and durum wheat (by grade) according to quality classes. The purpose of this is to determine each farm's commodity wheat resources and to guarantee the organized drawing of these into state procurements.

In the order, attention is directed to the fact that exchange of wheat for human consumption from the 1984 harvest for mixed feed and forage crop grains must be carried out according to the procedure and terms established by order No 331 of the USSR Procurement Ministry of 1 November 1976 and only after confirmation by rayon state inspections for purchases and quality of agricultural products of fulfillment by kolkhozes, sovkhozes and other agricultural enterprises and organizations of wheat sale plans to the state in 1984.

The expenditure for forage purposes of grain for human consumption that meets standard requirements for strong, valuable and durum classes of wheat is not permitted.

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FORESTRY AND TIMBER

USSR TIMBER MINISTER ON INDUSTRY PROGRESS, PROSPECTS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Sep 84 p 2

Article by M. Busygin, USSR minister of the Timber, Pulp and Paper and Wood Processing Industry: "Timber Production Line"/

Text Not one branch of industry can proceed in the absence of wood. Moreover, the requirements for wood are increasing. It is by no means an accident that a great amount of work is being carried out throughout the country in connection with the development of the forestry complex. The party and government are displaying concern for ensuring that this green resource is used in an efficient manner and that all of the wood obtained is processed completely. These requirements constitute the chief reference point for the branch's workers.

In preparing for their professional holiday, the forestry industry workers have launched a socialist competition for ahead-of-schedule fulfillment of the tasks for the state plan for 1984 for raising production efficiency and for realizing maximum economies in the use of raw materials and material and fuel-energy resources.

Thousands of leading production workers, brigades and many enterprises and associations completed their 9 month plans ahead-of-schedule.

A timber procurement brigade in Tyumen Oblast headed by Hero of Socialist Labor and USSR state prize laureate P. Popov completed its obligation for procuring 210,000 cubic meters of wood in honor of the forestry workers' holiday and thereafter it resolved to furnish 300,000 cubic meters by the end of the year. For the fourth five-year plan now, it has recorded the highest labor productivity in the branch.

Brigade leaders G. Uglyumov in Arkhangelsk Oblast and N. Astashkin in Sverdlov Oblast, both of whom were recently awarded the high title of Hero of Socialist Labor, also head collectives which are fulfilling their obligations ahead-of-schedule. High indicators were achieved by the brigade of cellulose processors headed by V. Vlasenko at the Kotlas Pulp and Paper Combine, which produced more than 1,200 tons of cellulose over and above the plan. It has personally accounted for a savings of 9,000 rubles. The wood processing production line at the Syktyvkar Sawmill-Wood Processing Combine headed by A. Yurkin is fulfilling its tasks by 118 percent.

By August the collectives at the Omskles and Chelyables production associations had completed their 9 month tasks. The all-union timber industry associations Tyymen'lesprom, Irkutsklesprom, Sverdlesprom and others are completing their 9 month tasks in honor of the holiday.

For the branch as a whole, the fulfillment of the plan for product sales has been ensured and the tasks for the hauling of wood and for the production of newsprint have been completed. Considerable quantities of goods of a cultural domestic nature have been produced over and above the plan in the interest of satisfying the needs of the people. This included furniture -- 145 million rubles worth. The entire increase in industrial output was achieved as a result of growth in labor productivity.

However the branch is still not performing in a stable manner. A large group of enterprises is not supplying the consumers with the more important products in accordance with established agreements. Certainly, we are well aware of the difficulties caused by this fact at the plants, factories and construction organizations.

One of the principal causes of unsatisfactory work by a number of our enterprises -- incomplete utilization of capabilities and inadequate level of executive and labor discipline. The ministry's board is undertaking measures aimed at overcoming the problems in these collectives and stimulating them into uncovering internal reserves.

We are confronted with the task of accelerating the creation of constantly operating all-round enterprises. They will procure wood and process it completely. This task is a pivotal one. The spread of leading experience accumulated in the branch will aid in solving it. For many years now the Prikarpatles Association has been carrying out forestry work and procuring and processing wood on an all-round basis. Many examples can be found within the branch highlighting the efficient use of natural resources. Workers at the Kotlas and Solikamsk pulp and paper combines are achieving economies in the use of raw materials by lowering the paper and cardboard bulk volumes and by making greater use of deciduous strains in production operations. The furniture workers at the Vilnyus Combine are producing high quality consumer goods using effective wood substitutes.

By the end of the next five-year plan, there should be a considerable increase in the volumes of processed wood obtained from soft deciduous strains, thus making it possible to protect and increase the supplies of coniferous wood. Taking advantage of the experience accumulated at Karellesprom and Severolesoeksprom in the production of chips made from wood waste scraps, the collectives of a number of enterprises in 1983 shipped 33.5 million cubic meters of wood scrpas for technological purposes and for fuel. At the same time, the production plan for technological chips is still not being fulfilled. Some leaders still lack a good understanding of the need for processing the wood waste scraps that have accumulated over a period of many years on the territories of their enterprises. In the interest of changing the attitude towards this important work, we are employing organizational and educational measures and we are also making extensive use of the experience accumulated at the Yugmebel' Association, the enterprises of which gathered up and used during

1983 approximately 230,000 cubic meters of waste wood scraps at plants and factories of other branches.

It is impossible to raise the branch's operational efficiency in the absence of growth in the technical level of production or the introduction of more improved systems of machines and technological processes. An all-round special purpose program has been developed for the mechanization of manual labor. The implementation of this program will result in the release of tens of thousands of workers from having to perform manual labor.

The procurement of wood occupies a special place in the timber complex. This is the most difficult work. And indeed other elements of our production line are dependent upon the carrying out of this work. This sub-branch is falling behind at the present time. In order to improve its status, we are increasing considerably the capital investments for the construction of timber hauling roads and for the creation of new capabilities. Much is being done in the interest of retaining the procurement specialists at their posts.

In the future we plan to increase by almost twofold the volume of wood procurements being carried out by machine assemblies in the tree felling areas. With each passing year, more and more lumberjacks will carry out their work under more comfortable conditions. Semi-automatic and automatic lines at lower timber yards will carry out cross-cutting work on 130 million cubic meters of wood. The plans call for the creation of new, more powerful and reliable machines for the transporting of timber, the construction of roads and for the restoration of forests.

Guided by the decisions handed down during the 26th CPSU Congress, workers attached to the timber industry are striving to ensure the complete processing of the wood raw materials and to develop, at leading rates, the production of progressive types of timber and paper products.

The most important trends with regard to raising the technological level and production efficiency in the pulp and paper industry -- raising the cellulose yield obtained from wood, developing the production of high quality semi-finished goods -- thermo-mechanical and chemical thermo-mechanical processing of wood bulk and further utilization of low quality deciduous wood and waste paper. A savings of approximately 1 million cubic meters of wood was realized in 1983 simply because a square meter of paper or cardboard weighed less.

Improvements are continuing in the production of furniture. The plans call for the production of more modern suites which will satisfy the needs of the population. Further mechanization and partial automation, including the use of robots in production, will ensure an increase in the labor productivity of the furniture workers. The use of thin wood panels, glued parts and synthetic plywood will furnish an annual savings of more than 300,000 cubic meters in a conversion for round timber.

A very important problem is that of increasing the service life of wood through proper drying and chemical treatment. The scientists and production workers have a great amount of work to carry out in this regard. The intensive path of development which our branch is following assumes an acceleration in the growth in labor productivity and reduced expenditures as a result of having

implemented improvements in the organization and material stimulation of workers. At the present time, 95,000 brigades have been created throughout the branch. We are undertaking the task, within the next 2-3 years, of converting the majority of the technological brigades over to cost accounting. Commencing in the early part of October this year, an experiment will be carried out at 10 industrial enterprises and two construction organizations in connection with the use of the collective contract at sectors on the whole, at forestry points and in departments and other structural subunits.

A socialist competition has been launched among the labor collectives for making worthy preparations for the 40th anniversary of the victory achieved by the Soviet people during the Great Patriotic War and the 50th anniversary of the Stakhanov movement. In response to the concern displayed by the party and government, the timber industry workers are undertaking new obligations associated with the ahead-of-schedule fulfillment of the plans for 1984-1985, raising production efficiency and with ensuring that the national economy is continuously supplied with timber.

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CSO: 1824/009

FORESTRY AND TIMBER

TIMBER DEPUTY MINISTER ON CEMA AID TO CELLULOSE INDUSTRY

Moscow LESNAYA PROMYSHLENNOST' in Russian 6 Sep 84 p 4

[Article by N. Nikol'skiy, first deputy minister of the USSR Ministry of Timber, Pulp and Paper, and Wood Processing Industry: "Socialist Integration in Action"]

[Text] A great deal has been said and written about the building of the pulp and paper plant that will be a part of the Ust'-Ilimskiy Timber Industry Complex. The capacity of this enterprise, equipped with the most modern technology, is 500,000 tons of bleached sulfite pulp. The building of this plant is one of the obvious manifestations of socialist integration, implemented in accordance with a general agreement signed by our country with Bulgaria, Hungary, the GDR [German Democratic Republic], Poland and Romania.

Our Bulgarian colleagues provided roofing materials and wall panels, cables, and loading-unloading mechanisms. Hungary supplied doors and window sashes and storehouse and ventilation equipment; the GDR--metal structures for building and electrical apparatus; Poland--paint, varnishes and pipes; and Romania--cables, cement and finishing materials. An international detachment made up of young workers from these countries participated in building. Today high-quality Ust'-Ilimskiy pulp is being delivered to fraternal countries, which is facilitating the growth of paper and cardboard production to a large degree.

This example is not only a typical manifestation of mutually-advantageous cooperation among CEMA [Council for Mutual Economic Aid] countries. In many ways it is symbolic of the exposition that opens 11 September on the territory of the capital's Sokol'niki and Krasnaya Presnya exhibition complexes. Continued consolidation of international specialization and cooperation in production output--it is this that characterizes the 5 years since the time of the exposition Lesdrevmash-79. It is the basis for all progressive transformations that have occurred in the paper and pulp industry of the countries united in socialist friendship.

In the last 15 years alone the output of pulp, paper and cardboard increased in these countries by a factor of 2.5-3. Pulp production has taken a step forward with great assurance. In Bulgaria, for example, it increased by a factor of 8.5, in Romania--7.2 and in the USSR--2.8.

During this period a number of the largest enterprises within the branch were put into operation or radically overhauled technically.

Of course, all of this required the continued development of production specialization and cooperation. Recommendations agreed upon within the framework of CEMA related to the pulp and paper industry were made the foundation of a number of bilateral and multilateral agreements among the corresponding ministries of participating countries.

Our cooperation has also acquired a stable structure. Thus, the USSR supplies its partners with mass and some industrial types of paper--newsprint, condenser paper, cable paper, packing, packaging and cardboard boxes, paper to be used for corrugation and paper and cardboard for automobile filters. From fraternal countries we in turn receive special and industrial types of paper, particularly that used for labeling, drafting, printing and to make photo supports.

In accordance with agreements on international specialization in and coordination of production signed in 1982 our paper-industry workers are specializing in the production of condenser and heat-sensitive paper for medical equipment, specialists of the GDR--of filter paper for quantitative and qualitative analyses, and our Polish comrades--of cable paper.

Recent years have enriched us with the experience of building and operating enterprises; the process of development of pulp and paper machine building has accelerated. All of this has enabled us to increase our assistance to socialist and developing countries with regard to developing and expanding pulp and paper enterprises. Today pulp and paper machine building in the USSR manufactures all of the basic types of equipment for producing pulp, paper and cardboard. The largest plants in the world to produce such technology have been created in Petrozavodsk, Izhevsk and Dnepropetrovsk. Institutes and other scientific organizations of the USSR Ministry of Timber, Pulp and Paper, and Wood Processing Industry are conducting intensive research in this direction. Soviet designs and equipment manufactured in the USSR have been used abroad to build over 30 modern enterprises of the pulp and paper and wood chemical industries, as for example the pulp and paper combine in the city of Stamboliyski (Bulgaria), the cardboard factory in the city of Turnu-Severin (Romania) and many others. The enterprises that were built with the assistance of the USSR produce viscous, sulfate and sulfite pulp and the most varied types of paper and cardboard.

In turn, we are successfully utilizing the equipment that comes to us from socialist countries. Thus, the production of wood fiber slabs in the USSR is developing on the basis of technology provided by Polish machine builders. Specialists from Poland and Romania are helping to supply our enterprises with massive pumps and disc filters for purifying waste water.

The significance of products from the pulp and paper industry continues to grow in CEMA countries. Today the agenda includes further strengthening business ties at all levels. In February of last year the "Prognosis for the Development of the Pulp and Paper Industry in CEMA Member Countries and the

SFRYu [Socialist Federated Republic of Yugoslavia] in the Period to 1990-2000, Including the Development of Scientific-Technical Research," was developed and submitted for approval. This is a new qualitative step forward on the path toward strengthening contact between specialists of fraternal countries.

It is to this strengthening cooperation first and foremost that the exposition opening in Moscow will be dedicated.

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CSO: 1824/032

FORESTRY AND TIMBER

MODERNIZATION OF PAPER, CELLULOSE INDUSTRY DISCUSSED

Ministry Official Interviewed

Moscow LESNAYA PROMYSHLENNOST' in Russian 13 Sep 84 p 3

[Interview with L.V. Grebenev, deputy chief of the Technical Administration of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry, by a LESNAYA PROMYSHLENNOST' correspondent: "A Successful Debut"]

[Text] The Specialist's Opinion

The pulp and paper industry is represented for the first time at the international exhibition "Lesdrevmash." New things in the industry aroused considerable interest on the part of visitors and representations of foreign companies on the very first day of the exhibition. Our correspondent asked L.V. Grebenev, deputy chief of the Technical Administration of the Timber, Pulp and Paper, and Wood Processing Industry of the USSR, to comment on the exhibit of the paper industry workers:

[Question] Leonid Vasil'yevich, please tell us which areas of technical reequipment of the branch hold the greatest promise today.

[Answer] Today, priority is being given to technical and technological solutions which make it possible to reduce consumption of materials and energy in the production of paper and pulp. The problem of obtaining a high fiber yield with the thorough processing of the wood is another important direction. Polysulfide pulping and pulping with the use of catalytic additives are important in this respect.

Conversion of the production operations is unquestionably the main direction in the technical reequipment of the branch, however. The fact should be mentioned that certain foreign companies which collaborate with us have rapidly reoriented themselves and are now counting on orders precisely for equipment for converting the machinery and cookers from the Soviet Union.

[Question] What models of equipment have drawn the greatest attention from specialists in the pulp and paper industry?

[Answer] The builders of papermaking machines have presented a number of interesting, modern designs of individual assemblies for cardboard-making and papermaking machines. These include a wet suction box with a ceramic cover and a ceramic hydroplate. They are designed for removing water from the bed in the

screen sections of papermaking and cardboard machines. The ceramic material helps to considerably reduce the coefficient of friction with the screen, which increases the service life of the equipment.

The exhibit includes an efficiently designed sprayer, which makes it possible to cut water consumption in half, a felt cleaning unit, and a combination metal-and-ceramic disc. Incidentally, licenses for the latter are already being acquired by leading foreign companies.

The branch's instrument making industry provided some interesting innovations such as a meter which indicates the amount of paper, an instrument which determines the paper's whiteness, its transparency and impermeability, and an instrument for determining oxygen needs, as an example. These innovations have also drawn the attention of foreign specialists.

[Question] What new types of products is the Soviet pulp and paper industry offering the users of its products in other branches and buyers from foreign nations?

[Answer] There are some interesting products made of composite materials--paper and polymers, for example. The branch is now producing the Temp and Kompozit synthetic paper, on which standard blueprint components can be made by any typographical method. Their universal adoption will make it possible to automate the planning and design work.

A technology which uses production by-products is being used for obtaining high-quality types of paper and cardboard. It includes, as an example, a method of obtaining unbleached sulfate cellulose from deciduous wood by adding activated sludge formed during the biological purification of industrial discharge. Activated sludge is also used in the process of sizing cardboard and paper for corrugation.

[Question] Leonid Vasil'yevich, what are the overall impressions from the Lesdrevmash-84 exhibition?

[Answer] The instruments and equipment produced by the Soviet pulp and paper industry are at the most modern technical level. I would also mention, incidentally, that the designers have helped the paper industry workers feel better at their jobs and consequently, to work more productively, during the past five-year period.

New Paper Production Process

Moscow LESNAYA PROMYSHLENNOST' in Russian 22 Sep 84 p 2

[Article by engineer Ye. Pechko, Leningrad: "An Anniversary Without Ovations--How They Dried Up the Dry Paper Production Process"]

[Text] We stand at the threshold of an extraordinary anniversary. A half-century ago a new and unique process was developed in our nation for producing paper and cardboard--the dry process. Throughout the many centuries since

paper was invented, water was used and continues to be used in the production of paper--first by hand and then with machines. The pulp and paper industry uses perhaps more water than the other branches. Suffice it to say that, depending upon the specific features of the technology involved, 40-60 cubic meters of water is used to produce one ton of newsprint. The very process used for producing it is called decanting. Then came the dry process.

The Soviet scientists did not stop with the theoretical work. VNIIB [All-union Scientific Research Institute of the Pulp and Paper Industry] associates M.D. Dmitriev and M.V. Bondarenko designed a fairly simple machine with the following operating principle: Strips of fibrous material are removed from a carding unit and stacked one on another on a belt conveyor, after which they pass through a starch bath and then through a drying unit and supercalenders, just as they would in a conventional papermaking machine.

The inventors' work received the State Prize of the USSR.

The paper industry workers were skeptical about the invention, however. The "infant" operated at a slow speed--four meters per minute--and its working width was only one meter. The technical data for the new system could in no way be compared with analogous indicators for machines operating with the traditional wet process. They exceeded the performance of Dmitriev and Bondarenko's machine several times over. And the gap subsequently increased. This is what accounted for the attitude taken by the paper industry workers to the fundamentally new technology.

The textile workers saw a real revolution in the four meters, however. This speed was 100 times greater than that of conventional looms, after all, and the new machine was almost noise-free. An adhesive process for obtaining non-woven material based on the VNIIB developments was introduced at the Textile Combine imeni Nogin in Leningrad. The textile workers set up a nonwoven materials institute and several design bureaus, and built enterprises which used the new technology.

But what are the prospects for adopting the innovation in the paper and pulp industry? Just in my memory the question "to be or not to be for the dry method" has been in the process of being resolved for three decades.

From the logic of things one could have anticipated "injections" into subsequent development projects to raise the speed of the dry process and increase the working width of the machines. Just the opposite occurred, however. No one in the former Ministry of the Paper Industry made an effort to build up the scientific base. There had been a small laboratory with a staff of no more than ten in the VNIIB, and the situation did not change. Furthermore, analogous teams in the TsNIIB [Central Scientific Research Institute of the Pulp and Paper Industry] and UkrNIIB [Ukrainian Scientific Research Institute of Paper] were disbanded entirely (as well as in the VNPObummash [All-Union Scientific Production Association of Papermaking Machinery?]).

Nonetheless, the VNIIB laboratory (which now has only one section), headed by A.Ye. Gushchin, a backer of the dry paper production process, has made some advances. This is eloquently attested by 30 author's certificates received by the collective in recent years. Collaborating with associates of the

LenNPObummash [Leningrad Scientific Production Association of Papermaking Machinery?], the VNIIB workers developed a machine which produces up to 100 meters of paper per minute with the dry process. The wet-dry process came into being in our nation as a result of the scientific research. It incorporates the advantages of both the dry and wet processes. And quite recently, a sifting process was developed for shaping the paper sheet.

The work of the small laboratory made it possible to reach the important conclusion that the paper sheet could be shaped at a speed of up to 300 meters per minute with a working width of three or more meters. And this is something, as they say. Unfortunately, however, the "something" also went unnoticed by those who should have noticed it--particularly the State Committee for Science and Technology of the USSR. When the results of the 9th Five-Year Plan were summed up, a period in which the subject of the dry process was still considered to be the most important, the GKNT [State Committee for Science and Technology] rejected a proposal submitted by the Ministry of the Paper Industry that sections with even 100 workers be set up in the VNPObumprom and VNPObummash. The same position was also taken later. The dry process was ostracized when the VNIIB's work for 1982 was evaluated.

In the meantime, the production of paper and nonwoven materials by the dry process is constantly growing and being perfected abroad. Dozens of enterprises are using the new technology to turn out bandaging materials and special clothing, coffee sacks and lining material for the interiors of motor vehicles, electrical insulation material and various kinds of filters, tea-bags and much, much more.

According to the forecast of G. Mossino, general secretary of the European Association of Nonwoven Materials and Disposable Items, the output of these materials will increase approximately ten percent this year. The same is expected for next year.

All of these facts indicate that we cannot afford to discount the dry production process. We need to consider the fact that the wet process has already reached the point beyond which it does not appear to be possible to further increase capacities, despite the adoption of double-sieve molding devices, presses and so forth.

The history of the development of technology is the history of a struggle for speed and increased productivity. Just what is to follow the wet process for producing paper? At the present time, science and technology offer nothing other than the dry process, although it does not have a high level of productivity. But that is today. What about tomorrow? Can we rule out the possibility of obtaining paper not from a water suspension but from a dry mass, at speeds of which we cannot even dream today?

The research needs to be continued, however, in order to make the proposed possibility a reality. It needs to be carried out at a higher level. And this requires an overall program, the precise distribution of obligations, responsibility on the part of the collaborators, and rigid control. We cannot do it without a powerful design bureau and a reliable machine-building base designed not for the production of experimental and industrial testing models, but for the production of industrial models of the new equipment.

We need to unite the efforts of specialists in the Scientific Production Association of the USSR Ministry of Timber, Pulp and Paper, and Wood Processing Industry, the Scientific Production Association of the Ministry of Chemical and Petroleum Machine Building and branches VUZ's. And we have such specialists. Furthermore, they will not have to start from the beginning at all. With respect to an industrial experimental base, the L'vov Cardboard Factory could become such a base after the necessary reconstruction. -

We need to resolve the problem of improving the new paper production process through joint efforts, ridding ourselves of interdepartmental disassociation. This is what we are directed to do by the decree passed last year by the CPSU Central Committee and the USSR Council of Ministers: "On Steps to Accelerate Scientific and Technical Progress in the National Economy."

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CSO: 1824/44

FORESTRY AND TIMBER

INEFFICIENT USE OF WOOD PROCESSING EQUIPMENT DEcriED

Moscow EKONOMICHESKAYA GAZETA in Russian No 36, Sep 84 p 10

Article by N. Rushnov, head of a laboratory for the barking of wood and M. Simonov, head of a sector at the Central Scientific Research and Planning Institute of Mechanization and Power Engineering in the Lumber Industry: "Is the Equipment Guilty?"

Text In the recently adopted decree of the CPSU Central Committee and the USSR Council of Ministers on improving the utilization of forest raw material resources, a need was pointed out for raising efficiency in the processing of waste wood scraps. Each year the sawmill plants of Minlesbumprom /Ministry of the Timber, Pulp and Paper and Wood Processing Industry/ accumulate approximately 60 million cubic meters of waste scraps, a considerable portion of which can be used for the production of paper. But on one condition: the bark should be removed before the logs are sawn or, as the specialists say, barking should be carried out.

The 11th Five-Year Plan calls for a twofold increase in the volume of barking work to be carried out at enterprises of the sawmill industry. However, this volume still remains at the 1980 level. At the present time, just as in the past, less than one half of the waste scraps are being processed at the pulp and paper combines. The remainder constitutes a considerable quantity of bark and it is being used mainly for fuel and for certain other needs of the national economy, that is, by no means is it being used in a thrifty manner. Why is this?

Quite often the leaders of sawmill enterprises refer to the poor quality of the barking equipment and to shortages in both spare parts and instruments (bark-removers).

They are partly correct with their claims. Truly, the Irshavremstanok Plant and the Petrozavodsk Machine-Tool Plant are not producing a sufficient number of bark-removers of various types. But at the same time, the machine-tool plants are unable to sell all of their products: commencing in 1981, the orders for barking equipment have been decreasing constantly. The Petrozavodsk Machine-Tool Plant, which annually produces 150-170 units, received orders this year for only 64 units. Fourteen of them have already been rejected by the consumers, including the associations Sverdlesprom, Lenles, Soyuztsellyuloza, Kaliningradbumprom and Arkhangel'sklesprom. Last year alone, 400 bark-removers were not purchased from the plants.

Some enterprises acquire equipment but do not install it. Some units have been in such a state for several years. Today the number of non-installed units at Minlesbumprom enterprises equals the number being produced annually at the Petrozavodsk plant.

But could it be that the equipment is so bad that it cannot be operated?

However, experience rejects this possibility. All models of these units being produced in the country are being operated successfully at enterprises in the Karelian ASSR -- Ilinskiy and Medvezhyegorsk timber mills, Petrozavodsk Sawmill-Furniture Combine, Kondopoga Wood Processing Plant and many enterprises in Sverdlovsk and Vologda oblasts. Everything is proceeding smoothly at these points and the productivity of the equipment, even for the barking of small diameter logs, the processing of which requires a great amount of time, is on the order of 100-130 cubic meters per shift. Moreover, the coefficient of use for the units is 0.67-0.79.

Twenty units of various models are in operation at the Luzskiy Timber Transshipment Combine (Kirov Oblast). The amount of bark in the chips being obtained does not exceed 1 percent. Each operator services two units. The repair of equipment here, which is well organized, is carried out by skilled fitters. The bark removers are welded, sharpened and adjusted in a special section. And as a result -- the expense for the barking of 1 cubic meter is 0.45-0.60 rubles. This is a very fine indicator.

Hence the problem is not one of equipment but rather it has to do with the enterprise leaders failing to display proper attention to the organization of the wood barking processes.

Barking does not require considerable capital investments, but on the other hand it does require a great amount of organizational work. In order for it to be effective, a new production sector must be created, workers must be selected and trained and high quality output achieved. In short, there are many concerns and there are also many individuals who prefer to avoid them.

Moreover the Kharovsk Sawmill-Wood Processing Combine of the Rosmuzprom Association, which purchased some units (including imported ones), did not bark 1 cubic meter of wood last year. It was not until after the RSFSR People's Control Committee had intervened that they began installing the units there.

Unfortunately, the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry did not display firmness in this matter. We cannot recall a time when an individual was called on to account for the fact that newly acquired barking equipment had not been installed.

It is believed that each sawmill enterprise of Minlesbumprom must necessarily plan the barking of wood and encourage those collectives which successfully carry out this work. It is our opinion that the ministry should ideally allocate special funds for the creation of barking sectors.

The time is at hand for devoting more serious attention to training personnel for work in these sectors. Formerly, the removal of bark from logs did not

require a high level of skill. However, just as much skill is required for servicing the barking units as is required for operating the log frames. This fact is not understood in all areas. By tradition, untrained personnel are usually employed for carrying out the barking work and this hinders efficient use of the equipment.

Courses for training operators for the barking machines should obviously be organized at the leading enterprises of the sawmill industry and the ministry should disseminate the experience of the branch's leading workers on a more extensive scale. Unfortunately, at the present time there is a lack of technical literature and visual aids that could be of assistance to the operators of barking units. The Lesnaya Promyshlennost' Publishing House is still under an obligation to the production workers in this regard.

The modernization of the Petrozavodsk Instrument Making Plant is nearing completion at the present time. In the future, the production of barking units will be doubled and in 1987 they will be produced in sufficient numbers to ensure that all of the enterprises of USSR Minlesbumprom will be supplied with them. The series production of new and more productive models -- double-rotor units -- is being organized in Petrozavodsk. But will there be a demand for them?

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CSO: 1824/41

FORESTRY AND TIMBER

DECREE ON TIMBER RESOURCE UTILIZATION PROMULGATED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 23 Sep 84 p 1

[Article: "Within the CPSU Central Committee and the USSR Council of Ministers"]

[Text] The CPSU Central Committee and the USSR Council of Ministers have passed a resolution entitled, "On Improving the Use of Raw Timber Resources."

The resolution notes that the great possibilities of the timber and wood processing industries and of forestry with regard to increasing their contribution to the development of the country's economy and to raising the standard of living of the people are still being used insufficiently.

The USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and the USSR State Committee on Forestry have weakened their attention to the more complete and efficient use of the country's raw timber resources, to the overall mechanization of operations and the building of timber roads, to the development of production capacities for the procurement and removal of timber and to the replanting of timber felling areas. Measures are not being taken to create multi-faceted timber enterprises for reforestation and for the procurement and complete processing of timber. Work on improving the structure of and on increasing the output of timber products, on improving the technology for processing wood and on increasing the length of service of timber materials is being carried out slowly. The wood of softwood deciduous trees is being used in production insufficiently; unused wastes resulting from timber procurement and processing are great.

The non-fulfillment of plans involving the delivery of timber materials by the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry has become a serious hindrance to the development of a number of branches within the national economy.

Party and soviet organs of some republics, krays and oblasts have decreased the amount of attention they pay to the operations of enterprises of the timber and wood processing industries and forestry, are slightly involved in questions of more thoroughly utilizing existing timber resources, including for local needs, and underestimate the importance of solving these problems.

With the goal of more fully and effectively utilizing timber resources for the continued development of the country's economy, of timely reforestation and the timely satisfaction of the needs of the national economy and population with regard to wood and other timber products, the CPSU Central Committee and the USSR Council of Ministers have obliged the communist parties of union republics and kray and oblast party committees to increase their attention to the operations of enterprises and organizations of the timber and wood processing industries and forestry and to take measures to improve the leadership of party organizations functioning in these branches; in the light of the decisions of the 26th party congress and subsequent plenums of the CPSU Central Committee, to strengthen mass political and organizational work in the labor collectives of enterprises and organizations of the timber and wood processing industries and forestry, to more closely relate it to production goals, to increase the effectiveness of socialist competition and to constantly demonstrate concern about improving working and living conditions and about recruiting cadres of workers and specialists; to increase demandingness toward directors of enterprises with regard to the achievement of plan goals by their enterprises and organizations.

The councils of ministers of union and autonomous republics and executive committees of kray and oblast soviets of people's deputies have been advised to show more concern for the effectiveness of economic activities of enterprises and organizations of the timber and wood processing industries and forestry, and to decisively eliminate existing shortcomings in the use of local raw timber resources; to more actively develop production capacities for achieving the complete processing of wood obtained from maintenance felling of timber and for the maximum utilization of wood processing waste products, raw timber seconds and waste paper with the goal of increasing the output of timber products.

The Ministry of the Timber, Pulp and Paper and Wood Processing Industry of the USSR and the USSR State Committee on Forestry have been assigned the task of working out, on the basis of a scientific approach to the use of timber resources, and implementing measures related to achieving stable operations of the timber and wood processing industries and forestry as well as the task of fully utilizing reserves and possibilities for expanding the production of timber products and increasing deliveries to consumers.

Special attention was focused on the necessity to increase production effectiveness and to improve production quality, on multi-faceted processing of raw timber, on a sharp curtailment of raw timber losses, on improving the use of existing equipment, machines and mechanisms, on the steadfast growth of labor productivity, on strengthening cost accounting and on significantly raising the quality of management in timber procurement and forestry.

It has been recognized as expedient to concentrate, by 1990, the execution of operations involving the procurement and removal of wood primarily in the enterprises and associations of the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and in regions where this ministry is the primary procurer of timber.

The councils of ministers of union republics and USSR ministries and departments involved in timber procurement have been assigned the tasks of in 1985 developing measures to bring order to the procurement and removal of timber and of implementing these measures in 1986-1990 with the purpose of achieving an enlargement of timber procurement enterprises and the elimination of small, economically ineffective sections, of fully and efficiently utilizing the timber felling fund and wood waste products and of improving production technology for timber procurement operations and labor organization.

In accordance with the resolution the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and the USSR State Committee on Forestry have been assigned the task of developing and implementing measures during the 12th Five-Year Plan related to a more complete and efficient use of the felled timber fund and to increasing the output of round timber by improving the splitting and sorting of timber; of foreseeing in building plans for new timber procurement enterprises the use of all felled timber; of achieving the coordination of operations of timber procurement enterprises and timber enterprises with regard to raising the effectiveness of measures being taken to reforest felling areas and to protect them from fires as well as to achieve an improvement in the use of production funds and labor and financial resources.

It has been proposed that the USSR State Committee on Forestry strengthen state control over the observance by all ministries, departments, cooperative and public enterprises, organizations and institutions and civilians of the established order for using forests, and of rules for managing forestry, for the timely and complete reforestation of felling areas with valuable tree stock, for increasing the productivity of forests and for strengthening their protection against fires, pests and diseases.

By the end of 1985 the USSR State Committee on Science and Technology and the USSR Academy of Sciences, together with USSR Gosplan, the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry, the USSR State Committee on Forestry, interested USSR ministries and departments and councils of ministers of union republics must work out and take measures to more fully and efficiently utilize raw timber resources in the European section of the USSR, including in forests of the first group, while keeping in mind the goals of achieving the effective assimilation of local raw timber resources, of improving the order for placing timber in groups and protection categories, of establishing the age of timber with foundation, and of improving the organization and execution of management in cedar forests with the aim of more fully and comprehensively using and reproducing the riches of these forests, including mature wood, nuts, mushrooms, berries and medicinal raw materials.

With the goal of accelerating the development of permanent complex timber enterprises for reforestation, procurement and complete processing of timber, the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and the USSR State Committee on Forestry have been assigned the task of developing and in 1984 confirming, with the agreement of the councils of ministers of union republics, a program for organizing such enterprises in

1985-1990, while envisaging their development first and foremost in regions with limited raw timber resources, in cedar forests and in zones where large timber processing enterprises are in operation; of developing and confirming, in 1984 and with the agreement of USSR Gosplan and the councils of ministers of union republics, a resolution on multi-faceted timber enterprises for reforestation, procurement and complete processing of wood as well as a list of the basic plan indicators of production-economic activities of such enterprises.

It has been suggested that the USSR Ministry of Agriculture, together with the USSR State Committee on Forestry and the councils of ministers of union republics, examine the question of effective use of kolkhoz and sovkhoz forests and develop and implement measures on more fully and efficiently using and raising the effectiveness of these forests.

With the goal of eliminating counter and long-distance shipments of timber, it has been recommended to USSR Gossnab [State Committee on Material Technical Supply of the USSR Council of Ministers], USSR Gosplan, the USSR Ministry of Communications, the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and the USSR State Committee on Forestry to develop, with the participation of interested USSR ministries and departments and the councils of ministers of union republics, and in 1985 to confirm efficient schemes for shipping such loads, including their delivery using truck, water and mixed forms of transport and envisaging an increase in the volume of shipments via waterways.

In order to achieve efficient shipment and an improvement in the organization of deliveries of timber, in 1985-1990 USSR Gossnab must implement the expansion of existing and building of new forest bases and storehouses, keeping in mind a significant growth in their capacities for turnover of loads.

It has been proposed that in 1984-1990 the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and the USSR State Committee on Forestry, together with USSR Gossnab and the communications ministry, implement measures to enlarge points for the removal of timber materials and to develop the means of mechanization and improve labor organization of workers at timber storehouses near railroads; by 1990 to significantly increase the volume of lumber loads transported via rail following consignment and multi-stop routes by means of implementing the aforementioned measures and the development of forest bases.

It has been proposed that USSR Gosplan, the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry and the USSR State Committee on Forestry foresee the necessary capital investments for improving residential-personal conditions for workers in branch enterprises in the five-year plan for 1986-1990 and in annual plans.

The resolution of the CPSU Central Committee and the USSR Council of Ministers determined that the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry is the leader in carrying out work on protecting timber from rot and ignition and that it is being assigned the function of carrying

out a uniform technical policy in the area of the technology for preserving wood and wood materials with antiseptics and for drying it.

The USSR Ministry of Higher and Secondary Specialized Education has been assigned the task of preparing, beginning with the 1985/86 school year, specialists with a higher and secondary specialized education in the area of protective treatment of wood and its products.

The CPSU Central Committee and the USSR Council of Ministers have expressed confidence in the fact that the corresponding USSR ministries and departments, party, soviet, economic, trade union and komsomol organizations and workers of the timber, pulp and paper and wood processing industry and forestry will make every effort to raise production effectiveness, to decrease production costs, to increase the coefficient of shift work for equipment and to increase labor productivity and strengthen labor discipline, that they will make a worthy contribution toward multiplying the country's forest riches and toward raising the effectiveness of forest use and that they will fully satisfy the needs of the national economy for timber and processed wood products.

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